

PREPARED food

OCTOBER 2016

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Contents

October 2016

6 Herbisaurus: growing a vegan food business from scratch

How one company grew from a
vegan idea to national distribution.

8 Why does the gluten-free diet fail some coeliac disease sufferers?

For about 50% of coeliacs, a gluten-
free diet does not give full symptom
relief.

12 Frying fish — not as simple as you think

You need to match the fish, the oil
and the technique to successfully
fry fish.

18 Are your peas where they are supposed to be?

How to check that the peas are next
to the carrots and the chicken is
facing the right way.

26 Texture modified diets

The challenge: maximising nutrition
and composition.

34 You should be scared of *Salmonella*

And very cautious of undercooked
eggs.

38 Transforming the hospital food experience

Fresh, ingredient-driven food has
increased patient satisfaction at
Stanford Health Care.

42 The growing market for meat substitutes

Demand for vegan and vegetarian
products is expanding the meat
substitute market.





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www.foodprocessing.com.au/magazine

What's in a label?

Labelling of foods and drinks is always quite fraught — the label has to do so many jobs. Firstly, it has to attract consumers and convince them that this is the item they want to buy. Then, at the same time, it has to meet all of the legal requirements for ingredients, allergy alerts, size, weight...

And all of this has to fit onto the label. As a consumer I really value honesty in labelling and expect the label to provide sufficient, accurate information about quality, quantity, composition and origin to enable me to make an informed choice. In 2014, the Australian Competition and Consumer Commission Chair Rod Sims said, "Consumers are increasingly making purchasing decisions that value the types of claims that directly affect the integrity of the product, such as where or how something was made, grown or produced. "Consumers must be able to trust that products match descriptions so they can make informed purchasing decisions. Misleading credence claims can also undermine the level playing field and disadvantage other suppliers."

Assurance claims such as Halal, Kosher and Vegan can be substantiated and certified by authorised persons but what about more nebulous claims like pure, fresh, natural, trim, lean, original, genuine, true or real?

Defining these terms is not simple.

In the US the FDA has asked the public

to provide information and comments on the use of the term 'natural' in the labelling of human food products.

The FDA took this action in part because it received three Citizen Petitions asking that the agency define the term 'natural' for use in food labelling and one Citizen Petition asking that the agency prohibit the term 'natural' on food labels. Also some Federal courts, as a result of litigation between private parties, requested administrative determinations from the FDA regarding whether food products containing ingredients produced using genetic engineering or foods containing high fructose corn syrup may be labelled as 'natural'. The FDA has considered the term 'natural' to mean that nothing artificial or synthetic (including all colour additives regardless of source) has been included in, or has been added to, a food that would not normally be expected to be in that food. However, this policy was not intended to address food production methods, such as the use of pesticides, nor did it explicitly address food processing or manufacturing methods, such as thermal technologies, pasteurisation or irradiation.

Consumers do not like being misled so time spent ensuring that the information on your labels is both accurate and not liable to misinterpretation will be well spent.

Good luck!



Regards

Janette Woodhouse

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Subscriptions for unregistered readers
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Printed and bound by SOS Print + Media
Print Post Approved PP100021504
ISSN No. 2205-488X

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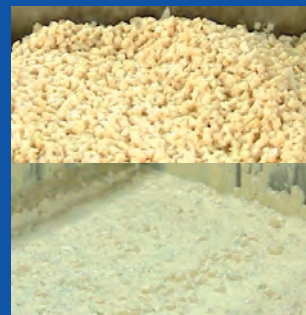
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After 1 minute

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Melissa Barks

Herbisaurus:

growing a vegan food
business from scratch



In less than two years, Herbisaurus has grown from a small home business selling vegan food at local farmers markets to a commercial kitchen with national distribution. Prepared Food spoke to owners Matt and Lisa Brune about how they have managed the transformation of their business.

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With demand for their product on the rise, Herbisaurus is about to outgrow its humble beginnings as a kitchen table enterprise ...

Run by the Brunes from their home in Sydney's southern suburbs, Herbisaurus aims to give families nutritious, flavoursome, vegan alternatives to meat.

"A lot of vegan savoury food is made with soy protein, which is quite processed. We only use whole foods. We buy chick-peas, we soak them, cook them, process them and that's our base. Or we buy fresh Australian pecans, grind them down to a meal and use that as the base," said Lisa.

Turning passion into business

The business began when, after friends insisted their vegan burger patties were good enough to sell, the couple began making 60 burger patties a week — hand formed in their home kitchen — for their

local farmers market. Sales were slow initially, so they started a home delivery service to clear the stock. Word spread on social media, and soon new products were added — vegan lasagne and sausage rolls.

"It took months to get the sausage roll recipe just right. I wanted it to taste good, for kids especially," said Lisa.

It's all about the equipment

That's when the business started to grow, so the couple built a commercial kitchen downstairs in their house and embarked on a steep learning curve to outfit it.

"The NSW Food Authority came out and advised us on how to set up the kitchen," said Lisa. "We started with one stainless steel prep bench. Then as we got income we would spend it on equipment. Our first purchase was a 7-tray Moffat blast freezer which quickly became too small, so we upgraded to a 13-tray Williams model."

As revenue increased, the focus shifted. Eliminating the time-consuming market and delivery sales, Herbisaurus became solely a food production business, supplying frozen food to retail and foodservice customers.

An average week now sees the Herbisaurus kitchen churn out 2800 burger patties, 150 m of sausage rolls and 300 lasagnes. And the business is still expanding, along with a rapidly growing need for equipment.

Installing an MKN bratt pan has been game changing for Herbisaurus. Vegan Bolognese sauce for lasagne, previously prepared in 22 L batches on a stove top, is a breeze in the 150 L bratt pan. Dairy-free bechamel sauce that once took an hour can be prepared in 10 min. Getting the 350 kg monster into their kitchen was quite an undertaking, however.

"It took six guys two and a half hours to get it from the front gate into the kitchen," Lisa said with a laugh.

A Helix Packaging continuous band sealer has slashed the sausage roll packaging process from an hour (using manual heat seal) down to less than 10 min.

Sometimes a little ingenuity is required and Matt turns his hand to engineering to make equipment that suits their needs. With a few modifications an automatic sausage stuffer was used to make burger patties and a further adjustment helped them fill their sausage rolls.

One of the next items on the Herbisaurus shopping list is a sausage roll filler that will be easier to clean and lighter to operate.

Securing a distribution agreement with vegan specialists Plant-Based Foods has taken the Herbisaurus range to a broader audience. The frozen products are now available in IGA, health food shops and vegan specialty stores around Australia, while lasagnes, burger patties and sausage rolls are supplied to foodservice outlets at major universities.

The importance of networking

Matt and Lisa freely admit they were novices in the food business when they began, and they're grateful for all the advice they've received along the way.

"We have a fantastic support group called Vegan Business Owners in NSW. There are some phenomenal businesses there. We have meetings once a month and people bring their issues and questions and then others share their knowledge," said Lisa.

Events like Fine Food Australia provide businesses like Herbisaurus an invaluable opportunity to meet with equipment manufacturers and discuss their needs. Matt is in the market for a 50 L bowl cutter to replace their trusty but overworked 4.5 L Robo Coupe, and is looking forward to doing some comparisons in Melbourne. His ears pricked up when I mentioned Foodtech Packtech, so we may meet up again in Auckland in October!

With demand for their product on the rise, Herbisaurus is about to outgrow its humble beginnings as a kitchen table enterprise, as the Brunes search for the perfect factory facility to expand their production capabilities. They are intent on growing their brand and hope to pursue export opportunities once they have sufficiently scaled up.

While commitment to vegan food is at the heart of this business, it is clear that the entrepreneurial couple has also fallen in love with the nuts and bolts side of commercial food production. □

Herbisaurus

www.herbisaurus.com.au



Why does the gluten-free diet fail some coeliac disease sufferers?

Around 80% of Australian coeliac disease sufferers do not know they have the autoimmune disease. They just accept chronic tiredness, anaemia, bloating, abdominal pain, diarrhoea and other gastric symptoms as a part of life.

Coeliac disease is fairly common, with around one in 60 women and one in 80 men in Australia affected. The disease is caused by an abnormal immune system response to the protein gluten, which is present in wheat, rye, barley and oats. A strict, lifelong gluten-free diet is currently the only recognised medical treatment.

By removing the cause of the disease, a gluten-free diet allows the small bowel lining to heal and symptoms to resolve. As long as the gluten-free diet is strictly adhered to, problems arising from coeliac disease should not return. However, for about 50% of Australians, coeliac disease symptoms and signs of intestinal damage

persist even after years of following a gluten-free diet.

Coeliac Australia is now funding two research programs at the Walter and Eliza Hall Institute of Medical Research.

Gastroenterologist Dr Jason Tye-Din will lead the study looking at the safety of oats for people with coeliac disease. Only some coeliacs get sick when eating oats, yet all coeliac patients are encouraged to exclude them from their diet. Why? Is there a safe dose of oats below which patients will not incur symptoms? What part of the oat causes problems for coeliacs? These are the questions Dr Tye-Din's team is hoping to answer.

The other WEHI study will investigate why half of all Australian adults with coeliac disease fail to get full healing of their bowel or suffer symptoms even after many years on a gluten-free diet.

Some of the reasons being explored to explain the failure of the gluten-free diet include:

- Packaged food labelled as gluten-free actually containing gluten

- Food handling practices in food outlets that prepare and sell gluten-free foods
- Patient knowledge of and compliance with the gluten-free diet
- The accuracy of tests intended to measure gluten levels in food

"The cause of ongoing intestinal inflammation or symptoms in people with coeliac disease is often attributed to accidental or low amounts of gluten exposure, but why this happens and what causes it is poorly understood," said specialist dietitian Dr Emma Halmos. "Persistent intestinal inflammation due to inadequately treated coeliac disease is a major concern, as it substantially increases the risk of complications such as other autoimmune diseases, osteoporosis, cancer and death."

People with coeliac disease interested in participating in either study should contact the Walter and Eliza Hall Institute's coeliac research nurse, Cathy Pizzey. Cathy can be contacted at coeliac@wehi.edu.au. ☐



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Smoothwall aluminium trays

DFC Packaging's smoothwall trays have a smooth rim, which allows each tray to be hermetically heat sealed with standard film on high-speed machines. Gas flushing techniques can be incorporated into the filling and sealing phases of meal production. Constructed from food-grade aluminium, they are said to offer a better barrier than plastic-constructed trays and are fully recyclable.

The foils are of a solid construction which maintains rigidity during the oven cooking process, is shatterproof when frozen and has a leakproof hermetic seal. Shelf life can be extended using MAP and the tray minimises handling of raw meat/poultry as it can stand up to the rigours of high-temperature oven cooking processes.

The aluminium foil trays are grillable, ovenable and suitable for the barbecue. They can also be used safely in microwave ovens by taking care the trays do not touch the sides of the oven during the cooking process.

Suitable applications include: ready-to-cook meat, poultry or fish; prepared meals, ready meals and breaded products; meat joints or similar, suitable for roasting; summer eating and barbecue food; whole chickens and turkey crowns; chilled vegetables and potato products; and individual-portion or family-size dairy desserts such as crème brulee, crème caramel and crème chocolate, which will be served hot.

Standard tray capacities range from 100–4750 mL.

DFC Packaging Group
www.dfc.com.au

Research eases parent guilt over baby food

Home-cooked meals are not always better than commercially available baby foods, UK research has found. Home-cooked meals are generally cheaper — unless organic ingredients are used — but they usually exceed energy density and dietary fat recommendations, according to research published online in the *Archives of Disease in Childhood*.

The researchers wanted to assess how well homemade and commercially available ready-made meals designed for infants and young children met age-specific national dietary recommendations.

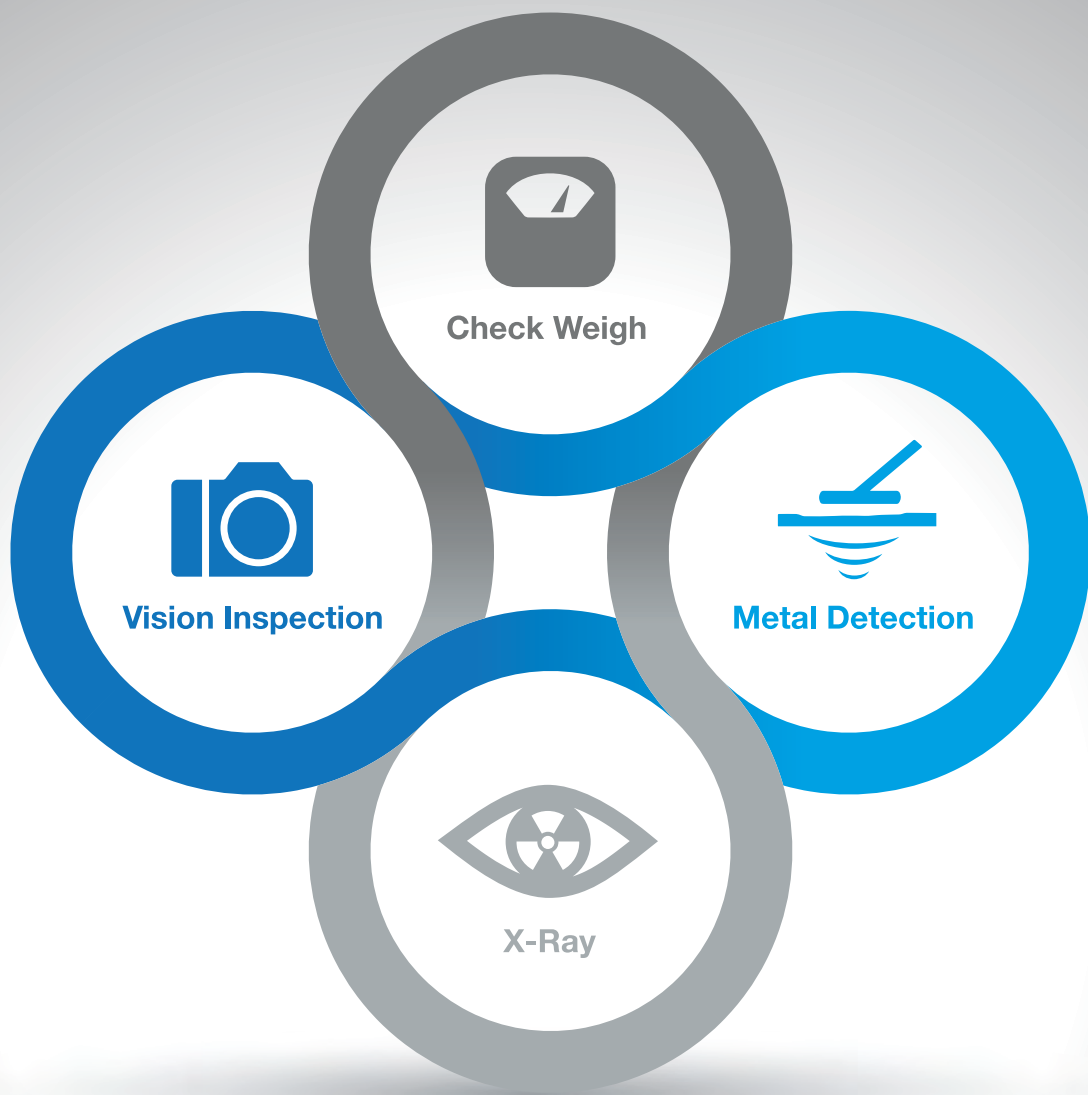
They compared the nutrient content, price and food group variety of 278 ready-made savoury meals, 174 of which were organic, and 408 home-cooked meals, made using recipes from 55 bestselling cookbooks designed for the infants and young children.

16% of the home-cooked meals were poultry based compared with 27% of the ready-made meals; around one in five (19%) were seafood based vs 7% of the ready-made meals; a similar proportion (21%) were meat based compared with 35% of the commercial products; and almost half (44%) were vegetable based compared with around a third (31%) of the ready-made meals.

Home-cooked meals included a greater variety of vegetables (33) than ready-made meals (22), but commercial products contained a greater vegetable variety per meal, averaging three compared with two for home-cooked recipes.

Home-cooked meals also provided 26% more energy and 44% more protein and total fat, including saturated fat, than commercial products. And while almost two-thirds (65%) of commercial products met dietary recommendations on energy density, only just over a third of home-cooked meals did so, and over half (52%) exceeded the maximum range. But home-cooked meals were around half the price of commercially available ready-made meals: £0.33/100 g compared with £0.68/100 g.



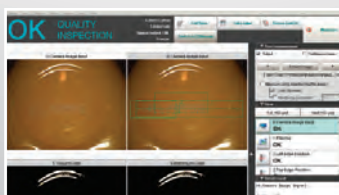


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Frying fish — not as simple as you think





... the healthiest option for frying is to use extra virgin olive oil and fry in the microwave.



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election of the fish species, cooking oil and cooking technique all play a part in frying fish.

Researchers at the UPV/EHU-University of the Basque Country have studied the changes that take place in fish lipids and in the oil during frying processes.

The frying techniques, the nature of the oil used and the fish species have been shown to exert a great influence on the changes that take place during the process. The researchers have shown that the choice of cooking oil is hugely important owing to its impact on the lipid profile in the fish and on the possible generation of toxic compounds in the oil during frying, which can influence food safety and human health.

To conduct this research, fillets of European seabass (*Dicentrarchus labrax*) and gilthead seabream (*Sparus aurata*) were shallow-fried in a frying pan and in a microwave oven using extra virgin olive oil and refined sunflower oil. The changes that took place in the lipid composition of the fish and of the frying oil were studied by means of proton nuclear magnetic resonance imaging (H-1 NMR).

Migration of lipid components between the fish and the frying oil

During the shallow-frying of the fish under domestic conditions, not only do the fish lipids migrate to the frying oil, the components of the oil are also transferred to the fillet of fish. As a result, the composition of the oil used for frying is modified: firstly, it is enriched by the acyl groups ('fatty acids') that are present in a higher concentration in the fish fat than in the original oil, and secondly, and simultaneously, it is depleted in the acyl groups present in a higher

concentration in the original oil than in the fish fat.

So after having been used for frying, the extra virgin olive oil was richer in omega-3, omega-1 acyl groups, linoleic and saturated fats (from the fish) and poorer in oleic, which is the main acyl group in olive oil. Likewise, after having been used for frying, the sunflower oil was richer in all the acyl group types (coming from the fish) except linoleic, which is the majority acyl group in sunflower oil. Furthermore, after frying, both types of oil were enriched by small amounts of cholesterol (from the fish).

As regards the fat in the fish fillets, its composition also changed during the frying process and became enriched by the acyl groups present in a higher concentration in the frying oil than in the fillet (in other words, oleic if extra virgin olive oil was used, or linoleic if sunflower oil was used) and in plant sterols. Simultaneously, during the frying process the lipids in the fish fillets were depleted in the acyl groups and minority components present in a greater concentration in the raw fillet than in the original oils, such as, for example, the omega-3 docosahexaenoic (DHA) and eicosapentaenoic (EPA) polyunsaturated groups.

Thermal oxidation reaction

Besides the migration of lipids during frying, because these oils are subjected to high temperatures (170°C) in the presence of oxygen, certain small-scale thermal oxidation may take place in them. In the extra virgin olive oil used for frying fish, this thermal oxidation reaction did not occur as it is more degradation-resistant than sunflower oil.

Yet in the sunflower oil used for frying fish in the frying pan, secondary oxidation compounds (aldehydes) were formed; some

of them are regarded as potentially toxic depending on the concentration in which they are found. It should be pointed out that these compounds did not form in the sunflower oil used to fry the fish in the microwave oven.

Therefore, in view of the results obtained and bearing in mind the generation of these compounds that are potentially harmful for health, the healthiest option for frying is to use extra virgin olive oil and fry in the microwave.

Fat content of the fried fish

The fish species used was also seen to be a factor that considerably influences the fat absorption-desorption process during frying. The fat content of the gilthead seabream had diminished after frying while that of the European seabass remained similar or increased with respect to the starting level.

This study shows that the frying technique, the type of oil used and the fish species exert a great influence on the changes that take place during the frying process. Correctly selecting the oil is of paramount importance owing to its impact on the final composition of the fat in the cooked fillet and the possible generation of potentially toxic compounds in the oil during the frying process, which will greatly influence food safety and human health.

The journal *Food Research International* has published the article 'The influence of frying technique, cooking oil and fish species on the changes occurring in fish lipids and oil during shallow-frying, studied by H-1 NMR', which deals with the work carried out by Bárbara Nieva-Echevarría, Encarnación Goicoechea, María José Manzanos and María Dolores Guillén. □



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Ready meals manufacturer fined for telemarketing breaches

Convenience meals manufacturer Easymeals has been fined \$13,600 for making telemarketing calls to numbers on the Do Not Call Register and for calling outside of permitted hours.

An investigation by the Australian Communications and Media Authority (ACMA) found that Easymeals' national call centre in Brisbane made calls outside of the calling times allowed by the Telemarketing Industry Standard. The calls were made to states with a time zone up to two hours behind Brisbane and were received earlier than the 9 am start time permitted on weekdays and Saturdays.

The ACMA investigation also found that Easymeals' call centres had breached the Do Not Call Register Act by making telemarketing calls to some consumers on the register after they had asked to opt out of further calls.

"Consumers should not be interrupted at unreasonable hours simply because a telemarketer has failed to take Australia's different time zones into account," said the ACMA's acting chairman, Richard Bean. Following the ACMA investigation, Easymeals has taken steps to ensure future compliance.

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The Eloma GENIUS MT combi oven is suitable for use in restaurants, canteen kitchens and system catering.

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The oven remembers the last 20 cooking processes and can be interconnected with HACCP data using USB or LAN. Quick Mode allows system caterers rapid and standard handling in all outlets via specifically predetermined operating sequences.

The oven features nine cooking methods, nine menu groups, low-temperature and Delta T cooking, 400 cooking and baking programs, a favourites function, various fan speeds and automatic heating and cooling with fast cooldown function.

The Live Steam system is generated by the heat recovery system and directly injected into the dispersion tube, saving energy and creating a precise quantity of steam without preheating.

The oven requires less than 2.5 min to reach 160°C and is stable and precise to the degree, even in the lower temperature range. Variable tray sizes supply 50% more capacity, with precise, regular air distribution at all levels providing even temperature distribution without turning, flipping or rearranging.

The Multi Cooking function enables the user to select one program or cooking method, with the oven determining all the accompanying programs required. Features include intelligent time control, a summary of all meals which can be cooked together — with multiple independent timer displays for each tray — and cooking times that can be controlled using the core temperature.

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Low level order picker

Mitsubishi's VELIA ES low level order picker is programmable to fit the customer's load and warehouse as well as the driver's requirements.

Featuring a Maxius steering wheel, spacious walk-through operator compartment and large platform, the chassis is

suitable for navigation in limited and confined spaces, with intelligent features boosting the flow of picking and productivity up to 20%, according to the company.

In the second level picking models, the steering wheel rises with the rising platform for extended operator comfort and safety. Platform and forks can both be raised while driving, minimising cycle times.

The ergonomically designed 105 mm low entry step reduces the risk of tripping, while driver presence sensing on the whole operator platform enables driving in several comfortable positions and instant take-off when safely on board. The multifunction steering wheel has an ergonomic design to ensure suitability for drivers of all sizes.

Each model offers a maximum drive speed of 12 km/h when the operator is riding, but sets a safe pedestrian speed in optional walk-beside mode. The series includes a choice of three models.

MLA Holdings Pty Ltd
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Jacketed cooking kettle with mixing arm

Metos Manufacturing's Metos Culino Combi Jacketed Kettles are suitable for all professional kitchens. A set of versatile functions make producing food in large volumes easier than ever; substantial production time is saved when the one appliance is used for cooking, mixing and optional chilling.

The integrated bottom mixer makes the kettle a flexible tool for chefs in busy kitchens. The mixer is easy to use and can gently mix soups and stocks, whip mash potatoes or root vegetables, crush and 'brown' minced meat or even make a bread dough.

Automatic mixing programs make many dishes a one-button operation, while maintaining the flexibility needed for any recipe a chef may have.

The electronic digital temperature control and display ensures accurate settings, smooth electric tilting makes decanting easy and a fully insulated kettle body saves energy while improving workplace safety.

The kettles are available in sizes ranging 40–400 L.

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Cutting board washing system

Euro Pumps has adapted the technology in its Tub and Crate Washer to use in the cleaning of large-format and heavy cutting boards.

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The bags are air treated before being packed for ease of opening.

Pac Food Pty Ltd
www.pacfood.com.au



Virgin Australia turns coffee grounds into gourmet mushrooms

Virgin Australia has partnered with sustainable mushroom start-up Fungimental to introduce sustainably produced oyster mushrooms onboard its flights.

The mushrooms are grown in used coffee grounds collected from Virgin Australia's Sydney lounge.

Virgin Australia resident chef Luke Mangan has designed a dish for the business class menu to showcase the mushrooms. Roasted chicken breast on corn puree with oyster mushrooms and sundried tomato salsa will feature on various domestic and international flights departing out of Sydney from 5 October 2016.

Each week, Fungimental collects 150 kg of coffee waste from Virgin Australia's Sydney lounge, resulting in 30 kg of gourmet oyster mushrooms. Over a 12-month period, 8000 kg of coffee waste will be collected from the lounge, producing up to 1600 kg of mushrooms. Fungimental founder Phillip White said: "Sydneysiders drink around 1.23 million cups of coffee every day, resulting in 86,100 kg of coffee waste. Most of that goes to landfill where the coffee releases methane, which is 22 times worse for global warming than CO₂."

US study finds free school lunches contribute to obesity

A US study has found that government-funded school meal programs are putting children at risk of being overweight. Associate Professor Wen You from Virginia Tech found that those children who were most likely to be overweight came from families who participate in both the school breakfast and lunch programs consistently throughout their elementary and intermediate school years. These children consume one-third to one-half of their daily meals at school.

"While well-intentioned, these government-funded school meal programs that are aimed at making kids healthy are in fact making participating students more at risk of being overweight," said You, associate professor of agricultural and applied economics in the College of Agriculture and Life Sciences. "This study identifies the hardest battles in crafting policy to alleviate children in low-income populations being overweight."

You's findings, published in the journal *Health Economics*, utilised a nationally representative longitudinal data of 21,260 students who were followed from kindergarten to eighth grade, and controlled for the self-selection and income effects to examine school meal programs' influence on the change in students' body mass index. The study revealed that the longer children were in the programs, the higher their risk of being overweight.

The study reveals the need to go beyond merely raising nutrition standards, to comprehensively design programs which can provide not just healthy food that meets standards but healthy food that will be acceptable and appetising to children.

"Policymakers need to consider all the aspects of school meal programs — from availability and affordability to nutritional content and tastiness. It is important to have extra policy support that will allow funding for programs, such as chef-to-school and farm-to-school, as well as culinary training for cafeteria staff so kids actually enjoy eating what is ultimately prepared for them," said You.



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Are your peas **where** they are supposed to be?

Andrew Key*

Which
inspection
technologies
can be used
in ready
meals?



Ready meals are a quickly growing category. But they're not straightforward to inspect.

What is a 'ready meal'? Principally, they are pre-cooked full meals, either frozen or chilled, that people simply reheat at home. It's a meal on the table in minutes that's all done for you. And in the words of CSIRO Professor Martin Cole: "Ready meals are not 1970s TV dinners, but highly nutritious packages designed by chefs."

Cole, director of CSIRO Flagship of Food, Nutrition and Bioproducts, told last September's Future of Food conference that ready meals as a business are taking off globally. "Everyone is time poor and yet everyone wants really good quality food."

Recently, the category has widened to include more online options. As well, we're seeing the convergence of home delivery of set ingredients for people to cook set recipes at home — a 'ready meal that you cook'. Lots of new companies have entered this space. However, for the purposes of this article, I'll look at the 'done it for you' version.

Growth upon growth

The past few years in particular have seen the rise of ready meals in Australian households, with the category's value growing 8% in 2015 on top of 10% the year before. According to IBISWorld, the category's revenue now sits at \$900 million per annum.

Several factors are driving this growth: as Cole said, time-poor consumers like the

convenience (particularly those living alone or younger adults without cooking skills), while health-conscious consumers favour low-fat meal options available for them.

Historically, less affluent consumers have been the main consumers of ready meals, but Euromonitor research has highlighted increasing numbers of more-affluent consumers taking the ready-meal option over their former preference of eating out or getting takeaway when cooking is not on the menu. This has been directly attributable to improved quality and attractiveness, as well as improvement in the perceived quality. IBISWorld data also attributes "premiumisation" as boosting the popularity of high-value, pre-cooked and pre-marinated meat varieties especially.



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Manufacturers typically want to check each ready meal has all its components; however, one of the complexities is that ready meals have multiple elements. So while a manufacturer might think each is the same — for example, in that it has potatoes, carrots, peas, meat and gravy — to a machine, every meal is different. That's because the amount of meat varies slightly, the shape of the potato varies, the position of the peas might vary. So it is actually quite difficult for a machine to look at ready meals and make a distinction that something is wrong or missing.

In order to check the presence of each component, the components need to be distinctly separated. Some ready meals come in this format, with trays of segmented elements; say the top left is meat, bottom left is peas, bottom right is potato and so on. The segmentation means it's possible to check each element is there with a vision system or potentially an X-ray inspection solution. But there are still a few challenges; as I began with, it's not simple.

Peas anyone?

A common inspection method is checking weight. However, while a checkweigher will make sure the total weight is correct, it won't tell you if the individual components are correctly there. For instance, the entire tray could be filled with peas, and still be the correct weight, yet you wouldn't be aware — at that point — that the meat and potatoes were missing.

So there are some challenges with inspecting ready meals. Now it's time to look at the plus side: what is possible to inspect?

As just mentioned, a checkweigher will tell you if the total pack weight is right; any over- or under-weight packs will be immediately pushed off the line for rework.

Checking for contaminants

Ready-meal manufacturers can inspect with a metal detector or X-ray to make sure a knife-point, bolt or other piece of metal hasn't fallen in. Magnets can be used to make sure there are no fine metal pieces in a pack, but their uses are limited and they're not very good for a ready-meal application. That's because magnets aren't effective on stainless steel (which is what most food processing machinery is made from); they only pick up

ferrous metal — plain steel — but on top of that, if there's a little crumb of steel in a piece of meat, that piece of meat will be too dense for the little piece of metal to move through (to get to the magnet) and too heavy for the whole piece of meat to stick to the magnet.

However, metal detectors and X-rays can be used to check that metal is there, rather than isn't.

For instance, I often buy a prepared salad at the supermarket for my lunch the next day. Manufacturers in this case can use a metal detector to check for the inclusion of the oxygen absorption sachet or an X-ray to check for the presence of a knife and fork, or the tartare sauce, or other components with metal attributes. For example: if a knife and fork are detected then the pack is passed as 'okay'. If either is missing then the pack is rejected.

Vision systems can also perform this function, but need to be used to inspect the pack before it is sealed; whereas the metal detector or X-ray can do it after the pack has been sealed.

Right pack, right product

Vision systems can be used to inspect the product, as well as the packaging, to make sure the right front and back label are being used for the product being run and/or that the packaging is sealed. Anyone in the packaging industry will know that these are real issues, and there are plenty of examples of recalls where the label on a pack does not match what's inside the pack!

A common vision inspection application is where the manufacturer wants to check, say, that potato salad is running through the processing line in potato salad tubs. There are two common ways that such a system operates:

1. A sample product is made and checked by quality control. If it passes, then it is used as a reference sample to 'teach' the system what to expect. After the system is taught that 'this is potato salad' from the first one, everything else running through which matches the reference sample is passed, and therefore anything that does not match is rejected. The only risk with this system is that if there is a defect on the reference sample, then the system will pass any products with that defect as good! This just means

But the category's growth isn't just in a wider audience choosing this for their evening meal — 'occasion' is also a growth factor. Euromonitor market research shows chilled ready meals are also being promoted as the ideal lunch option — especially for those whose workplaces aren't near a cafe or milk bar (I'm speaking from experience here; see below). This can be seen by the growing range of ready meals available: salads, meat and rice based dishes, and sandwiches — now available at the local supermarket.

Complexities in casserole

So now we come to an obvious question: how do ready-meal processors keep their customers safe and satisfied with fit-for-purpose products? What inspection equipment is suitable?



So it is actually quite difficult for a machine to look at ready meals and make a distinction that something is wrong or missing.

the operator needs to be certain the 'teaching' product is perfect.

2. Many manufacturers go an extra step and create a library of items they can choose from when they run the line. This is superior to the first method as it has the advantage of being less reliant on the operator because there is a reduced requirement to 'learn' the product at the start of production. In this case, the vision system refers to the library for the reference sample and makes the pass or reject decision based on a comparison of the product with the sample from the library. This gives a higher level of control and reliability.

For packaging inspection, a common method is to for the system to verify there is a label on the top and a barcode on the bottom of the pack, and whether that label and barcode match 'potato salad'. If everything matches, then the product is ready for sale. Conversely, anything that does not match is rejected.

A vision system can also check for proper seals. Tubs or trays not sealed correctly can let in air, which, of course, can allow bacteria to grow. But again, this is

not necessarily simple; with clear film and a clear tray, this can usually be done; but if the tray or film is a strong colour, such as black, it gets more difficult.

One at a time

A golden rule for inspection is that products must be checked one at a time.

Ready meals are predominantly packed in trays, and I've been in ready-meal factories where the tray machines feed out several at a time. Often these then go in rows of multiples across a conveyor belt and feed through a metal detector or X-ray. It's fine to do this on an X-ray, as most units have the capability to inspect each item individually — even when presented in a random fashion or in multiples at a time. However, it's a definite no-no if using a metal detector. There are multiple problems here; for example: the metal detector won't be able to tell which product is the one with the stray pocket knife, so, if there are five products all coming across the conveyor at once then all five would be rejected.

That is clearly wasteful of all resources, so, unless you are using an X-ray, products should always be run through inspection

in single file. Of course this potentially takes a bit more line length, which can be a problem in some factories. If that's the case, then talk to your supplier about how you can do it.

Customise

The ready-meals market is booming, everywhere. Indeed, at that Future of Food conference last year, CSIRO's Prof Cole said there was a renewed charge in fresh produce value adding, by making nutritious ready meals to export to Asia. (This is good news for Australian manufacturing and comes on the back of decades of declining food manufacturing, struggling exports and a strong Australian dollar.)

But as we've seen, it's actually quite complicated to inspect ready meals. As a matter of necessity though, this is changing.

The other point to make is that while it seems there are lots of things that inspection can't do, there are countless things it can do. The key is to talk to a reputable supplier, to create a tailored system for your business while working within the capability of the equipment being used. That will allow you to keep your products fit for purpose and keep your consumers — and your brand — safe. □



Inspecting ready meals can be complicated. It's important to have a tailored system that allows you to keep your products fit for purpose and your consumers — and brand — safe.

**Andrew Key has over 25 years' experience with packaging machinery, inspection technologies and identification technologies. His career spans across organisations like Alfa Laval, TNA and others; helping manufacturers to effect process improvement using the latest technology from around the globe. He has designed and implemented systems that have saved companies hundreds of thousands of dollars. In his current role as the Business Development Manager for Inspection Technologies at Matthews Australasia, he is constantly looking at cutting-edge technologies for customers to improve quality control. Andrew grew up in the country and loves the outdoors. In his spare time he enjoys sailing, snow skiing, water skiing, bushwalking and camping.*

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Heat and serve frittatas

Sunny Queen Meal Solutions has added frittatas to its range of heat and serve egg products, which are designed to provide tasty, nutritious and convenient options for foodservice menus and eliminate the need to use raw eggs.

Available in two flavours, Vegetable and Asian Chicken and Corn, the frittatas are cooked fresh and then snap frozen and can be heated in microwaves, combi ovens or conventional ovens.

This means that egg-based meals can be delivered safely with little risk of egg contamination, which is especially important when cooking large-scale quantities. Additionally, the reduced overheads and shorter cook times result in improved profitability and time to plate.

The frittatas have no added artificial colours or flavours and are HACCP certified.

Sunny Queen Meal Solutions
www.sunnyqueenmealsolutions.com.au

Compact, stainless steel scale

All models feature a large, durable, grade 304 stainless steel pan that accommodates ingredients, powders or a weighing container. Solid, one-piece construction and a sealed keypad reduce the chance of damage from foreign materials entering the scale. The stainless steel housing can be cleaned quickly, preventing the accumulation of particles or spills.

The scales are available in three models: ASC 2001 has a capacity of 2000 g and readability of 0.1 g; ASC 4001 has a capacity of 4000 g and readability of 0.5 g; ASC 8000 has a capacity of 8000 g and readability of 1 g.

The scales are suitable for weighing recipe ingredients for small or large batches. For dietary control in healthcare facilities, individual food servings can be weighed to ensure they conform to size requirements. In foodservice and catering settings, portion measurement can help manage costs and optimise profit margins.

The scale can be operated with two AAA batteries or the included AC adapter.

Adam Equipment (SE ASIA) Pty Ltd
www.adamequipment.com.au

Online resource on FODMAPs and low FODMAP diets

A comprehensive online resource offering information and printable guides about FODMAPs and low FODMAP diets has been developed ostensibly to support both the consumer seeking more information about a low FODMAP diet and the healthcare professional looking to build knowledge and practice tools.

It is equally useful to food providers as they create meals to meet the needs of their consumers.

The acronym FODMAP (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) was coined by gastroenterology researchers at Monash University in 2005 to classify specific types of short-chain carbohydrates that can be poorly absorbed in the small intestine.

The poor absorption of these food components may trigger symptoms including abdominal pain, bloating, constipation and/or diarrhoea, and excessive gas in people with digestive sensitivities. FODMAPs are commonly found in a wide variety of ordinary foods, such as wheat bread, beans, yoghurt, milk, apples, onions, garlic, cashews, mushrooms, honey and more.

LowFODMAPCentral.com was developed by Nestlé Health Science, a company focused on advancing the role of nutrition in the management of health. The site includes:

- information on FODMAPs and foods that contain them;
- animated visuals of FODMAPs in the body;
- tools that can help a person identify if this diet is right for them and if so, how to get started;
- research summaries highlighting the efficacy of a Low FODMAP Diet;
- recipes and guidance for following a Low FODMAP Diet;
- tips for finding a FODMAP knowledgeable registered dietitian nutritionist (RDN).



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SilkAir launches business class menu

SilkAir has launched a new menu for business class customers travelling on flights leaving from Singapore that are 3 hours and above.

The full-service regional wing of Singapore Airlines has released an All-Time Favourites menu offering 20 meal options across Asian, Western and Singaporean cuisines, with customers able to book their meal — breakfast, lunch or dinner — up to 24 hours in advance online, through travel agents or reservations offices.

"The dishes we have curated for the All-Time Favourites menu is a reflection of SilkAir's multicultural Singaporean heritage and also pays tribute to the 49 diverse destinations that we fly to," said Mr Foo Chai Woo, chief executive of SilkAir.

Alongside the launch of the All-Time Favourites service, the in-flight offering for business class travellers has been expanded to include freshly squeezed orange juice and champagne upon boarding, handmade chocolate pralines and masala tea.

The menu includes Singapore Hainanese chicken rice, fried carrot cake, fried hokkien mee, chicken tikka, mutton masala and fish biryani. Customers who prefer western meals are catered for with blueberry pancakes, roasted salmon fillet or grilled beef tenderloin.



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Linking equipment boosts production rates

After Global Foods' nut roasting room was destroyed in a fire, the company took the opportunity to build a more efficient system that's both dynamic and multifunctional.

Enmin, a designer and manufacturer of electromagnetic and electromechanical

Removing fines was the first objective, once the product left the fryer it was to be turned at right angles and conveyed the full width via an electromechanical vibratory feeder. The feeder has a screen section prior to discharging that removes a large portion of all undersized product, which is collected underneath the feeder.

The next requirement was to ensure accumulation could occur and the product could be buffered/stored in the process when necessary. This was required in circumstances where there was a need to stop the system downstream for any reason, or when an alternative packaging format was required.

The roaster couldn't be turned off, so the ability to buffer the product was essential.

Enmin decided to use an electromagnetic hopper feeder with a diversion system. This enabled the product to be stored for a period of time so that when required the product could either be transferred to a bulk packing system or allowed to continue onwards to the high-speed vertical packing end.

At this point in the system, it was necessary to be able to deliver the product to two bulk bags or two 25 kg boxes for filling. A reversing vibratory feeder was the ideal solution. After the hopper feeder, the product was elevated and delivered centrally into the feeder so that the operator could control which discharge point was ready to be filled.

The key benefits of the Enmin system have been the ability to maximise production rates, ensure efficiency through minimal operator intervention and deliver a system that provides multiple packaging options without equipment interchange.

Enmin Pty Ltd

www.enmin.com.au



vibratory and product handling equipment, with extensive food industry experience, provided a turnkey solution that linked the roaster, the multihead weigher, VFFS, checkweigher and metal detector.

The new system can bulk and mini pack, potentially at the same time with minimal interruption and maximum efficiency. The four key ingredients were all vibratory feeders in screening, storage, metering and delivery of product.

Nutella repackages foodservice tubs

Nutella has repackaged its 3 kg tubs, switching the pack colour from brown to white to ensure foodservice operators can keep track of their product usage.

"Following customer feedback that the inside of our brown tub can make it hard to distinguish the true usage of Nutella, we have looked to repackaging our foodservice tubs," said Jodie Tripodi, national sales manager foodservice, Ferrero Australia & New Zealand.

The new tubs offer a stark contrast to the Nutella inside, allowing chefs to quickly and accurately gauge how much product they have left. The white tub also makes it easier for kitchen staff to identify cracks and possible product seepage, allowing kitchens to remain safe and hygienic.

The foodservice-specific tubs will be rolled out from September.





Australian avocado pulp

Simpson Farms uses high-pressure processing to preserve the natural appearance, flavour and goodness of avocado. This cold pasteurisation technology means the kosher, halal, SQF2000 certified avocado pulp has a longer than usual shelf life.

The product is available in 12 x 500 g peel top thermoformed packs and can be stored frozen at -18°C for up to two years or refrigerated unopened at <4°C for 14 days. The product should be used within three days of opening.

Simpson Farms
www.simpsonfarms.com.au

Gluten-free pizza bases

Letizza Bakery gluten-free pizza bases are handcrafted and versatile. Available in two sizes (9" and 11"), they are supplied frozen to be thawed, topped and baked.

The bases are manufactured in Australia from quality ingredients to ensure a consistent final product, with reduced preparation time and labour costs.

Letizza Bakery
www.letizza.com.au



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Samantha Murray*

Texture modified diets — the challenge:
maximising
nutrition and
consumption



Eating is a fundamental pleasure in life. One of the biggest challenges for foodservices in aged care facilities is creating appealing and tasty meals to bring pleasure for residents requiring texture-modified meals.

Texture-modified diets are designed to make chewing and swallowing safer and easier.

There are four different diet types recognised under the Australian standards, with each being unique and not interchangeable.

1. Regular/unmodified diet: All foods are included here with no restrictions.
2. Soft diet: Foods are slightly different to

the regular diet in that tough, chewy, dry foods are excluded. Although not minced, these foods should be 1.5 x 1.5 cm and be moister than most regular textured foods. It is important to note that toast and salads, including raw/shredded vegetables, are not included in a soft diet.

3. Minced and moist diet: Foods should be no larger than 0.5 x 0.5 cm, and contain no hard or sharp pieces. A blender or vitamiser may be required to achieve this consistency for some foods.
4. Puree diet: Foods should be of a smooth consistency and contain no hard or sharp pieces. Once again, a blender or vitamiser is required to achieve this consistency.

Swallowing difficulties, known as dysphagia, can often occur among the elderly due to a number of conditions such as stroke, head or neck injury, cancer, cerebral palsy, poor dentition, dementia and other illness, or as a result of ageing.

Aspiration (inhaling) of food into the lungs as a result of inadequate chewing or swallowing is recognised as a major contributor to respiratory infections and pneumonia. People with dysphagia often require texture-modified meals to ensure they can continue to consume meals safely without aspirating. A speech pathologist will assess someone with swallowing difficulties to determine which of the four diets will be most suitable to optimise intake and safe swallowing.

The risk of weight loss and malnutrition are often heightened when on a texture-modified diet due to the following factors:

- Early fatigue at meal times.
- Monotony of menu items.
- Diets too low in energy and/or protein.
- Requiring assistance with meals.
- Unappealing meals being served.

A texture-modified diet should reflect the meal offered to residents on regular diets. Food served must be well prepared, flavourful, nutritious and appealing. Variety in flavour is paramount when providing meals to those having texture-modified diets.

Making 'every mouthful count' should be the mantra when preparing meals for people with dysphagia to maximise nutrient intake. It is essential to ensure texture-modified meals offer adequate protein and energy. Fortifying meals with extras such as butter, cream, oil, cheese, milk powder or cream

cheese can be an excellent way to boost the nutrition of a meal. Some neutral commercial nutritional supplements can also be useful for meal fortification. Talk to your dietitian about different options available.

Lastly, some useful tips to optimise the nutritional intake of people on a texture-modified diet:

- Make meals as visually appealing as possible. Try food moulding, piping to recreate the look of the regular textured meals.
- Ensure good colour and appeal on the plate — try using garnishes.
- Ensure food items are served separately on the plate — don't mix them all together.
- Add cooking liquids, gravy, milk, butter and sauces to enhance colour and kilojoule (energy) value rather than adding water.
- Vary the type of sauce or gravy that is served with the meal each night to avoid flavour fatigue.
- Use spices to add flavour.
- Consider delightful food smells such as bread baking or coffee brewing prior to meals. These are simple yet effective ways to stimulate appetite and saliva production for people with dysphagia.
- Ensure meals are served at the correct temperature to optimise taste — hot foods hot and cold foods cold.
- Ensure meals offer adequate fibre — blended prunes on cereals/yoghurt, adding legumes/lentils into soups or adding fine textured bran into porridge. Healthy bowels will encourage a healthy appetite.
- Ensure staff and carers are encouraging when serving texture modified meals. □

**Samantha Murray is an Accredited Practising Dietitian (APD). She is the Founding Director of Food Solutions Diet Consultants, a specialist team of Aged Care Dietitians and Speech Pathologists consulting throughout Australia. Samantha is a member of the Dietitians Association of Australia's Food Service Interest Group. To find an Accredited Practising Dietitian (APD), visit the 'Find an APD' section of the DAA website at www.daa.asn.au or call 1800 812 942.*



Joint venture sees Australian food headed for Asian childcare centres

Australia's Beston Global Food Company (BFC) has entered into a joint venture with Singapore-based MindChamps Holdings to provide foods to preschool children in 35 early childcare centres in Singapore and the Philippines.

MindChamps currently supplies 6000 meals each school day to the children in its childcare centres. While the initial focus of the joint venture will be on the centres in Singapore and Manila, the intention is to roll out the initiative to other countries as MindChamps expands across Asia and into the Middle East.

BFC exports premium seafood, dairy, meat and health nutrition products to China, Japan, the Middle East and Southeast Asia. The South Australian company's 'closed supply chain' model means it owns all its farms and processing facilities, and controls marketing and distribution.

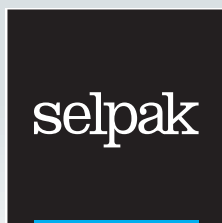
BFC Chairman Roger Sexton said the purpose of the Beston MindChamps Kids Nutrition joint venture was to provide fresh and nutritious eating options for young children and to educate them about the need to make healthy food choices.

"The program, along with a number of the foods for MindChamps, has been designed by our in-house dietician and the food technicians in our various BFC operating businesses," Dr Sexton said.

"The foods are produced from carefully selected and evaluated ingredients after taking into account a range of nutritional and other factors such as artificial food preservatives, sustainability of seafood, animal welfare, antibiotics in meat and pesticides in vegetables." The joint venture will operate as a special purpose company in Singapore with 50% of the shares held each by BFC and MindChamps Holdings.



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Rubbermaid Commercial Products has launched the Executive Series line of cleaning supplies and materials that match the look and feel of high-end properties.

Featuring a black and silver design, the range is designed to blend into an up-scale environment, conceal supplies and reduce noise. Lightweight and powerful, the products enable staff to easily manoeuvre through a property without disturbing guests.

The range comprises more than 100 products suitable for both front and back of house, including guest reception, lobby and public areas; guest rooms; conference/meeting rooms and business centres; restaurants and kitchens; and pool, spa and fitness centres.

Rubbermaid Commercial Products
www.rcpworksmarter.com



Retorted chickpeas

Pangkarra Chickpeas are grown in the Mid North and Yorke Peninsula regions of South Australia by farmers who employ sustainable farming practices.

The chickpeas are soaked and cooked through a retort system (pressure cooking) — a completely natural and preservative-free process that ensures the product remains pure and healthy, but with an 18-month shelf life.

The chickpeas are low in fat, low in GI, lactose-free, high in fibre, high in protein and gluten-free. With a desirable crunch and flavour, the chickpeas are ready to eat and serve, making them an easy, quick meal option or snack food. They are suitable for hummus, salads, curries, soups and more.

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David Jones catering to the high-end ready meals market

David Jones chief John Dixon believes the high-quality food market in Australia is not being adequately serviced and that, by catering to this niche, David Jones can take a slice of the \$100 billion Australian food market.

The company is intending to invest \$100 million to build its food business over the next three years and is planning to deliver a world-class food experience including fine dining, food halls, restaurant-quality take-home meals, and premium food and groceries.

David Jones is partnering with Neil Perry in driving the transformation of its food services.

Dixon has already had some experience in the premium ready-to-eat meals market during his time as boss of Marks and Spencer's \$9.7 billion food business.

The biggest takeaway from this time is his insistence on the importance of freshness and quality ingredients.

In the middle of next year, David Jones will launch its revamped food operation at its Bondi Junction store. Prior to this, the company will trial some different food initiatives.

David Jones is already looking to build relationships with local suppliers.

Safety matting

3M's range of Safety-Walk Economy Matting is made from durable natural rubber and available in multiple textures, from bubble-like dome shapes to open hole construction and an economy ute liner.

The mats are lightweight and easy to clean. They offer multiple options for increasing the slip resistance of an existing floor by providing better traction or aiding with the removal of water from the floor surface.

Many of the products provide cushion comfort for workers on their feet for long hours, in order to assist with fatigue reduction.

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Juicer

The Kuvings Professional Whole Slow Juicer Chef CS600 features low-speed cold press extraction where the fruit is slowly pressed and squeezed rather than ground and chewed. Outputs of 40 L/h, stainless steel chassis, quiet heavy-duty motor and extra-wide feeding chute make this robust juicer suitable for professional environments.

The powerful, low-speed motor is able to process very fibrous fruits and vegetables. The unit stays cool, quiet and stable thanks to its slow processing speed.

Kuvings Cold Press Juicing
www.kuvings.net.au

Euro Pumps tackles baked-on oven tar



Commercial Wire Designs is a Queensland-based designer and manufacturer of racks, carts and trolleys for supermarkets, refrigeration and commercial use.

The company approached Euro Pumps for assistance in cleaning baked-on tar from refurbished bakery racks.

The racks are used daily by major food retailers in their in-store bakeries and are subject to heavy use and staining. The staining is produced by the heating of food oils and sugars used in the baking process, leaving a particularly sticky tar on the equipment that would normally require an overnight caustic bath.

A trial of Euro Pumps' advanced cleaning techniques was a resounding success. The test sample of almost 20 racks was completed in under an hour, using a fraction of the water and chemicals.

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The Easy Conveyors EMBS flat top conveyor system is a flexible, cost-effective solution especially designed for the transportation of large and bulky items, such as large cardboard boxes, and for handling products in soft plastic bags. The conveyor system also handles large flows of smaller items with ease.

The wide belt conveyor can be bought in components, modules or as a complete system. The flexible, modular design makes assembly and modifications simple, enabling the system to be adapted to suit any requirements or application, and make the best use of available space. Because of this flexibility, economic use is guaranteed.

The system can be supplied in aluminium or a hygienic stainless steel version, which is suitable for food processing environments. Its multiflex plastic chain allows the system straight, horizontal and vertical running capability.

This wide belt conveyor is highly flexible, with straight, L-, S- or C-shaped conveyors available as standard configurations. It is available in 255, 340, 425 and 510 mm widths for product widths up to 700 mm.

The post packing to palletisation versatility of the systems ensures efficient product flow even for production schedules that require multiple products on a single production line.

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Food production scale

In food production, automated portioning reduces operator waste costs and ensures uniformity for the customer.

Using a takeaway scale can increase productivity and reduce 'give-aways'. Suitable for multiple applications, including pizza topping assembly or packing small tubs of salad by hand, the takeaway scale can determine the amount of product removed from a larger 'bulk tray' to enable easy manual handling.

National Weighing's Takeaway Scale System consists of a Diade DD1010i terminal and AND SC30BM full stainless steel base work. The scale is configured to 20 kg x 2 g and a target value is entered into the terminal to enable the operator to 'take out' the desired amount of product.

The indicator screen displays whether the weight is correct, low or high by changing to green, red or yellow, and the system stops the operator moving on until the weight of the current item is acceptable. The terminal monitors the accuracy of the amount being removed and can provide reports on throughput, the number of packs produced by the operator and totals weighed. The system can intelligently reduce tolerance windows once the operator achieves a high level of repeatable portioning accuracy.

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Crunch time for Listeria.

Sanicrunch, Jasol's new hard floor sanitiser, has been developed specifically for all Food & Beverage areas where micro-organisms thrive in wet, walked on conditions. It's ideal for dairy, meat, poultry and all food preparation environments.

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- Contact time for effective bacterial kill is 5 minutes at 20 deg.C
- Easily rinses from treated surface



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You should be scared of *Salmonella*

Liz Wallace, HACCP Consultant

Salmonella is found quite commonly in nature and has been in the news quite a bit recently. How can this tiny microorganism, where thousands could fit on the head of a pin, make a large human being ill or even worse, could kill a person?

There are *Salmonella* 'outbreaks' regularly in Australia and these will become more prevalent as the weather warms up. The more recent cases include:

- The InterContinental in Adelaide — 71 ill and 21 hospitalised — linked to eggs
 - Brisbane Convention and Exhibition Centre — 250 ill — linked to eggs
 - Northern Territory Melon Farm — 86 ill across the states — linked to rockmelon
- Illness includes all of the symptoms of gastroenteritis but can be fatal, especially if the infected person is an infant, elderly, pregnant or with a compromised immune system. If the dose received in the food is large enough, even a well person will become extremely ill and have trouble fighting off disease.

Microorganisms need the same things as we do to grow and survive. They need food, moisture, warmth and time to be able to multiply.

When foods or surfaces are contaminated with *Salmonella* it can easily be transferred by cross-contamination to ready-to-eat foods when food handlers are either not careful or not properly trained.

Salmonella spp. is also not spore forming and should therefore be killed in an adequate cooking process.

So how can we control this nasty?

We cannot control the 'food' or the 'moisture' *Salmonella* requires, but we can control it through temperature control — minimising the time food is allowed to stay in the growth range of temperatures — and through training in good food handling practices.

Salmonella spp. multiply happily between 5.2 and 46.2°C with the optimal temperature being 35 to 43°C. This is so close to our body temperature that when ingested they multiply happily in us if our body cannot adequately fight off the dose taken in and that is also why they are found in the intestinal tract and faeces of animals.

So, keep cold things cold until they are needed for cooking. Keep eggs in the fridge

and once they have been in there for a few days, when cooking, fully cook them (scramble, omelettes, etc).

Good hygiene will reduce the risk of cross-contamination — wash hands after handling shell eggs, and businesses should have staff correctly trained in good food handling practices.

HLP Controls carries a range of 'HACCP Approved' thermometers that will help check on food temperatures and also has online training programs to help staff know what to do and how to do it to protect your business and your customers from one of these outbreaks. ☐

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Gut microbiomes and the modern diet

Diets poor in plant-based fibres may be associated with imbalance and reduced diversity of human gut microbiomes, a study has suggested. Rich in fat, sugar and animal protein, the quintessential modern Western diet is often deficient in plant-derived fibres. To explore the effects of diet on gut microbiomes, Dan Knights and colleagues from the University of Minnesota sequenced DNA extracted from faecal samples from two primate species — red-shanked douc and mantled howling monkey — that were raised in zoos, sanctuaries and nature, representing captive, semi-captive and wild settings, respectively. Despite being raised on vastly divergent diets in zoos as far-flung as Southeast Asia and the United States, captive primates, unlike wild-reared individuals, displayed similar gut microbiome compositions to modern humans, including a predominance of *Prevotella* and *Bacteroides* species.

Sanctuary-reared primates, who were fed a plant-based diet that included some of the plants available to wild-reared primates, displayed moderate levels of microbiome diversity and disruption compared with zoo-reared primates of the same species.

Microbiome disruption was significantly associated with changes in dietary fibre content but not with factors such as geographic location and antibiotic usage, suggesting that diet largely influences microbiome composition in captive primates. According to the authors, the findings underscore the link between fibre-rich diets and gut microbiome diversity.

The research has been published in *PNAS*.



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Flowfresh flooring meets the hygiene challenge for vegetable processor

When Chef's Pantry refurbished the vegetable processing area of its plant in Braeside, Victoria, it was imperative to ensure a hygienic environment that would maintain the freshness of its produce. To meet this priority and minimise the risk of contamination, a flooring solution was required that would facilitate the removal of dirt, grime and bacteria from the area.

Approximately 1200 m² of Flowcrete Australia's Flowfresh SR (4-6 mm) and Flowfresh Sealer was installed to create a seamless, easy-to-clean finish that would maintain an impervious, gap-free coating.

Daniel Grunfield, Chef's Pantry's sales manager, said the Flowfresh SR has made floor cleaning much easier and faster.

The ash grey, light-reflective finish provides the site with an aesthetically pleasing surface

able to withstand the inevitable impacts, traffic, spillages and cleaning that it will be subjected to in a business that supplies over 90 tonnes of fresh food products every week.

A key factor behind Chef's Pantry's choice of flooring was that the Flowfresh range has been HACCP International certified, now a key requirement of many due diligence processes, including the approved procurement of materials.

Flowfresh also incorporates the antimicrobial additive Polygiene, a silver-ion-based agent that is able to eliminate up to 99.9% of bacteria in contact with the floor. The polyurethane system has been proven to meet the ISO 22196 standard, which measures the antibacterial effectiveness of plastics and other non-porous surfaces.

The combination of HACCP International certification and ISO 22196 compliance gives Chef Pantry confidence that Flowfresh can meet the food industry's stringent hygiene demands.

Flowcrete Australia
www.flowcrete.com



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Whey-based toddler foods an untapped market

Dairy ingredients such as whey represent a major untapped opportunity for food and beverage brands in the booming toddler food and beverage market, according to supplier Arla Foods Ingredients.

Euromonitor valued the global toddler food and beverage market at US\$34 billion in 2015 and forecasts it will grow at a rate of 11.4% between now and 2018.

Anne Staudt Kvistgaard, senior manager for pediatric at Arla Foods Ingredients, says the toddler years are a crucial period for ensuring children receive the right nutrients and develop healthy eating habits.

Dairy ingredients such as whey can be utilised for toddler-specific products such as snack bars, squeezable pouches, yoghurts, fruit drinks, milky drinks and toddler formulas.

Arla Foods Ingredients has developed a range of dairy ingredients suitable for the toddler food market, including Lacprodan whey proteins, Lacprodan ALPHA-10 proteins for gut health, Capolac with >24% milk calcium and Lacprodan PL-20 milk protein concentrate.



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Transforming the hospital food experience



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Sodexo has released the Stanford Health Care Food Transformation Journey, a case study outlining how Sodexo and a local chef set out to better align food concepts with the high level of health care for which the renowned institution is known.

The results exceeded expectations, achieving a Press Ganey Patient Satisfaction Score for food that increased by 140%. The new approach also diverted 199 tons of compostable material and 172 tons of food from landfill — all while delivering higher quality, nutrient-rich food offers that yielded a year-over-year sales increase of 15% from 2014 to 2015.

The food transformation journey began in 2013 with the formation of a committee that consisted of culinary, clinical nutrition, patient advocacy, employee wellness and business operations experts. To execute on the vision, Sodexo partnered with local chef Jesse Cool, who has 40 years of experience in the restaurant industry. She introduced a new concept for Stanford Health Care called Farm Fresh. These menus feature organic, sustainable ingredients that are primarily sourced from Northern California.

"It's not a traditional wellness program regulated by specific nutrient profiles," said Helen Wirth, RDN, Administrative Director, Hospitality Services, Stanford Health Care, who has been leading the Stanford Health Care

food transformation for the past three years. "Instead, we infused concepts reflective of our vision: fresh, ingredient-driven, unprocessed, sustainably produced and sensible food."

Sodexo played a key role in working through the supply chain issues that brought the transformation to life. This included sourcing antibiotic-free and non-GMO meats from local vendors. Stanford Health Care is the first hospital in the country to serve Certified Non-Genetically Modified beef to patients, staff and visitors. The product comes from local pasture-raised certified organic beef that is free of hormones and antibiotics.

New staff pushed beyond the typical approach to institutional food service, by cooking from scratch, altering recipes and training staff. It required time, education and re-tooling of established foodservice techniques used in high-volume, cost-controlled environments. It was no easy feat, considering that Stanford Health Care:

- serves 1.8 million meals annually;
- manages 75 million annual food purchases;
- purchases 5 million compostable products.

A farmers' market was also established in the Stanford Health Care cafeteria. Every Wednesday (year-round), staff and visitors can purchase seasonal produce. Customers are encouraged to sample the freshly prepared salads in the cafe that Sodexo chefs create using the same locally grown, organic foods available in the farmers' market. They

can purchase individual foods by the pound or a 'recipe bag', which includes all of the ingredients needed to prepare the salad along with a recipe card.

Everything from major renovations to space design, customer flow and cashier lines and improving the overall customer experience was considered. To further engage customers, the team implemented a 'storyteller' feature where a hospital nutrition student trained in the farm fresh concepts engages customers in a discussion about the local fare that is offered. The storyteller is present a few times a week, offers samples and discusses features of the food (for example, what region it is grown in and from what farm it is sourced). Sampling allows customers to try items like a cilantro- or garlic-infused olive oil drizzle for their vegetables, which are prepared without salt or seasonings.

The sales results show that rather than driving customers away by offering healthier options, they can actually increase sales. Following the new approach, 2016 sales are on track for a 22% increase. The Food Transformation at Stanford Health Care will continue with the transformation of additional cafe stations to the Farm Fresh concept, which will also be incorporated into the cafe renovation and the new Stanford Hospital, consisting of 824,000 square feet of space, which will open for patient care in 2018. □



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The products are suitable for foodservice, catering, gift hampers, corporate gifts and buffet dessert presentations.

The pudding features a fig and brandy flavour and the cake uses fresh and dried fruit. All products are vacuum-sealed for freshness and long shelf life.

Our Festive Puds
www.ourfestivepuds.com.au



Fair Work Ombudsman's hospitality audits reveal concerning results

The food services and accommodation industry kept the Fair Work Ombudsman busy in the past year, accounting for 40% of Enforceable Undertakings entered with employers in 2015/16.

Fair Work Ombudsman Natalie James said 43 Enforceable Undertakings were executed in the period, 17 of which were employers in the food services and accommodation sector, up from 11 in 2014–15. Cafes and restaurants continue to feature prominently, accounting for one in five of the workplace pacts signed over the past two financial years. And takeaway food businesses emerged as a subsector with ongoing issues, accounting for 19% of Undertakings within the food services and accommodation industry.

Enforceable Undertakings were introduced by legislation in 2009 and the Fair Work Ombudsman has been using them to achieve outcomes against companies that breach workplace laws, without the need for civil court proceedings.

"We use Enforceable Undertakings where we have formed a view that a breach of the law has occurred, but where the employer has acknowledged this, accepted responsibility and agreed to cooperate and fix the problem," James said.

In 2015–16, a total of \$3.85 million in underpaid wages and entitlements was returned to 2132 employees as a result of their employers entering into Enforceable Undertakings with the Fair Work Ombudsman.

This is up slightly on the \$3.75 million recovered for 2507 workers the previous year.

Food services and accommodation continues to generate high numbers of dispute notifications, accounting for 16% last financial year. Similarly, 36% of matters placed before the Courts in 2015–16 involved employers from the food services and accommodation industry. Workers aged 30 or under were more likely to have lodged the originating dispute, accounting for two in every three disputes that resulted in an Enforceable Undertaking.

The results reflect the Fair Work Ombudsman's three-year national hospitality campaign, which commenced in 2012 with a wave of audits of pubs, bars, taverns and accommodation houses, followed by restaurants, cafes and catering businesses and finally, takeaway food outlets.

The three phases of the campaign resulted in 801 employers found to have short-changed 4540 of their employees in excess of \$2.342 million and only a 52% compliance rate with workplace laws.

The agency's website provides a wide range of free tools and resources aimed at helping both employers and employees meet their obligations in the workplace.



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Online marketplace for butchers

An online meat marketplace is giving local butchers and farmers a way to connect directly with customers who want access to local butcher service and products but may not have the time to shop.

Butcherman.com.au was formed by Paul Tory, a second-generation butcher, and Charlie Arnott, a third-generation farmer, and seeks to provide consumers with access to butchers and farmers who traditionally didn't offer an online or delivery service.

Before joining the online marketplace, butchers must satisfy four requirements:

1. Vacuum packing meat while maintaining taste.
2. Flexible delivery times to work around customers.
3. Friendly service.
4. High-quality meat.

"We wanted to devise a system which made sure customers didn't miss out on the best grades of meat, because they couldn't get home in time to visit their local butcher," said Tory.



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The growing market for meat substitutes

A 60% rise in global food and beverage launches using a vegetarian claim between 2011 and 2015 highlights the market opportunities available in the meat substitute market, according to Innova Market Insights.

Launches featuring the term 'vegan' also rose to account for 4.3% of total introductions in 2015, up from 2.8% in 2014 and just 1.5% in 2012.

Food and beverage companies can harness new opportunities to develop products aimed at vegans, vegetarians, non-meat eaters and non-red-meat eaters, as well as the emerging segment of 'flexitarians', who mainly eat a plant-based diet, but do occasionally eat meat.

"This trend represents a growing opportunity for high-quality meat alternatives, which is also being reflected in the 24% average annual growth in global meat substitute launches recorded between 2011 and 2015," reported Lu Ann Williams, director of innovation at Innova Market Insights.

Germany has been leading the trend, with high levels of new product development in meat alternatives and meat substitutes, and 69% of consumers claiming to eat meatless meals once a week or more. The US is lagging behind on just 38%, although 120 million Americans already eat meatless meals, so this also represents a significant opportunity.

The trend towards flexitarian, vegetarian and vegan diets has accelerated the move

towards the use of plant-based proteins as meat substitutes. The majority of meat substitutes are still soy- or wheat-protein based, but products are evolving with alternative protein ingredients such as egg, pea, ancient grains and nuts.

"Paradoxically, another key area of opportunity in meat substitutes may be in targeting meat eaters as much as vegetarians," noted Williams. "While many vegetarians may opt for a diet rich in vegetables and beans, meat eaters may turn to meat substitutes if the product is right. Instead of just finding alternatives, technological solutions also need to be focusing on the development of meat substitutes closely mimicking the taste and texture of meat products." □



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NEW X-DETECT 2.0 DETECTABLE FOOD-GRADE PLASTIC COMPOUND

Wells, with partners BS Teasdale (BST) (UK), has launched an upgraded range of detectable products for the Australian and New Zealand food processing industry.

Years of R&D by BST has led to the development of this unique plastic, now incorporated into the Wells range of detectable products.

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As the focus on risk management of foreign contaminants increases, supermarkets and audit bodies are demanding more detectable and safer products all the time. BST recognise this and these product upgrades deliver reductions in risk when used as part of an overall food safety program. Wells offers free site surveys to assist QA professionals in this area.

Wells, works in consultation with industry partner and NZ metal and X-ray detector manufacturer Dynamic Inspection Ltd. The two companies recently undertook extensive training using the new BST Detectapens which incorporate X-Detect 2.0 compound plastic, to validate the significant benefits of these product upgrades.

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