

**KERRY**

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Kerry

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Creating  
authentic flavour  
from an ageless  
kitchen tradition

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Stocks and Broths



## Introduction

In recent years, the public's demand for 'real' ingredients has moved brands and manufacturers in a new direction toward more natural, whole-food cooking processes and cleaner labels. Consumers no longer want or accept artificial or "nature-identical" (natural tasting, but synthetically created) ingredients in their food. The drive for authentic ingredients is here in earnest, and is where stocks and broths created using traditional kitchen-focused methods hold a clear advantage.



This kitchen-replicating approach has other benefits. As we all strive to optimise our processes in favour of greener, more sustainable operations and applications, the traditional kitchen-based production of stocks and broths stands out for its adherence to time-honoured principles of home cooking and stock-making. It naturally utilises the by- and co-products of food manufacturing, adopting a more circular approach to production that not only appeals to consumer sentiment for sustainability, but also delivers amazingly rich, authentic flavours that allow for clean labels that can help build brand loyalty and support.

We spoke to our culinary product development experts and chefs to gain insights into the exciting trends emerging in the stocks and broths category, and how they are creating sustainable value in every drop.

### Some key trends are evident:



The replacement of flavours is being targeted in many foods and beverages, and stocks and broths are a time-honoured way to infuse flavour into food.



Product development is leaning toward making ingredients more clean label in nature.



Exciting new tastes are being developed and commercialised.



Several new areas are trending: sipping broths, immune support and plant protein fortification.



Clean label stocks and broths are providing the authentic, full flavours consumers demand.



## Contents

Introduction	1
From Food, For Food Stocks and broths around the world	2
Innovating with stocks and broths, from our kitchen to yours	3
Bringing authenticity through Kerry's stocks and broths solutions	9



Kerry  
Stocks and Broths Research Paper



Stocks and broths, which have emerged from a combination of the human love of cooking and innovating are now a beloved staple planetwide



## From Food, For Food Stocks and broths around the world

### A culinary exploration of traditional, time-honoured stock and broth favourites from around the globe

For much of human civilisation and recorded history, stocks and broths have reflected a core cooking tradition: making maximum use of limited food resources. Leftover bones, as well as meat and vegetable chunks, were all saved for use in flavoursome stocks, broths, sauces and soups, making for an inherently clean and sustainable process and product. Over time, culinary traditions have been developed, improved and passed down from generation to generation, century after century. Today's consumers seek to authentically recreate and creatively reimagine these traditions with integrity, energy and agility.

These traditions range widely. From Italy's ancient Roman blend of *stracciatella* (the world's first egg drop soup) and *minestra maritata* (a beautiful mélange of vegetables in broth) to the mutton broth of Scotland, every region and even every village has its own rich heritage of comforting foods made from stocks and broths derived from local (and often leftover)

ingredients. In many other European cultures, the terroir of localised regional variations has provided the basis for an exploration of uniquely regional tastes and flavour experimentation, among them *remouillage*, meaning "re-wetting", to describe a second stock made from bones that have already been used once.

Europe isn't alone in this tradition. Consider Cajun ham stock from the southern US made from ham hock and, across the Pacific in Southeast Asia, prawn stock derived from boiling prawn shells. Meanwhile in China, the ancient 'master stock' favourite dates back hundreds of years, if not longer, and has been passed down through the ages. Typically made with soy sauce, sugar, ginger, garlic and other aromatics, master stock is used primarily for poaching or braising meats and infuses a complexity of flavour with each subsequent simmer. In southern China, the Cantonese term *lou mei* refers to any dish made by simmering meat, offal, tofu or kelp in a master stock.

In Japan, the simple but elegant fish broth *dashi* serves as a foundation for much of the country's cuisine. Made by quickly and gently simmering

kelp and dried skipjack tuna to inject intense flavour into the liquid, glutamate-rich dashi was the source of the discovery of *umami* – the 'fifth taste' – by Japanese chemist Kikunae Ikeda in the early 20th century. Like many culinary innovators, Professor Ikeda was eating dashi in his soup and noticed it was more delicious than usual. His subsequent research led to the discovery of glutamate in many tasty foods, and opened up a new world of flavour sensations.

Sauces and broths that use fish as their source have been a staple for thousands of years and date back to ancient Rome. In the first century CE (common era), fish sauce was actually used as the basis for the world's first documented collection of recipes. Possibly passed along trade routes, or spontaneously generated, fish sauce is now a staple that boasts endless regional variations in many Southeast Asian cultures. It is so versatile and has so many exciting and imaginative uses that it can either take the lead or blend into the background – a chef need only choose.

More recently, in the twentieth century, Vietnamese pho was developed during the period of colonial French rule that started in the late 1800s. Exposed to the culinary traditions of the French, Vietnamese chefs took the French pot au feu – 'pot over the fire' – and developed the unique Vietnamese pho using bones and meat 'waste' discarded by the French. The innovation: a classic simple beef, broth and noodle dish cherished the world over.

In Korea, ox bone soup can be served as a more concentrated entrée – called *tang* – in restaurants, while a thinner soup – called *guk* – is served at home. The origins of this stock date back hundreds of years to when Korea's king asked his people to develop dishes aimed at extending the food supply. Ox bone soup is often served with a bowl of steamed rice, typically accompanied by local variations of vegetables and other items.

In Latin America, Mayan cultural staples such as corn, squash, beans and chilies led to the region's most popular soup, the Yucatan's *sopa de lima*. This offering even includes the bitter limes first introduced to the area centuries ago by the Spanish conquistadors, adding a tang that brings back strong memories of *cocina de la abuela* – 'grandmother's kitchen' – for many.

Today, the push to innovate in food continues to spur the development of new tastes. Stocks and broths, which have emerged from a combination of the human love of cooking and innovating – not to mention adversity, a desire to explore and a compelling wish to make full use of the Earth's treasure trove of rich food resources – are now a beloved staple planetwide. As we learn more about the cuisines of other nations, we will no doubt continue to innovate, collaborate, and combine. Our enterprising spirit and global culinary centres of excellence put us on the leading edge of innovation in this category, trying and learning as we develop tastes that surprise and delight new generations seeking rich flavour experiences.

## Innovating with stocks and broths, from our kitchen to yours

Stocks and broths are a staple in many cultures around the world. Used for generations to infuse flavour into sauces, gravies, soups and meals, they were the world's first flavour ingredient.

What started as a time-honoured tradition slowly fell out of favour as the industrial revolution brought on mass-produced foods and food flavourings became the cost-effective norm. In a world of substitutes and alternatives, there is now a consumer desire to go back to the basics, pushing brands and manufacturers toward more natural, whole-food cooking processes in the quest for cleaner labels. Our innovation expertise combined with our real-food heritage means that we can answer consumer cravings for authentic, home-cooked flavours made from recognisable ingredients with the convenience consumers have come to love more comprehensively than any other player in the market.

Our scalable, kitchen-like process that is used to create stocks and broths has progressed in recent years with ingredients gently cooked in large kettles to bring out richness, freshness and succulence. They are then strained and reduced for a natural, scratch-made taste that a chef would achieve in a traditional kitchen.

Here, Kerry's culinary experts from around the world share their broth-making processes and their ideas for innovating around broths' natural goodness.



Stocks and broths were the world's first flavour ingredient.



*"A stock is a means of utilising otherwise potentially lost ingredients. So, this is a waste-capturing – but, better yet, flavour-capturing – mechanism."*

### 1 RICHARD TROMAN SENIOR INNOVATION AND APPLICATION CHEF IN FOODSERVICE BRANDS, KERRY

Richard knows that there's no substitute for time and care when making authentic stocks.

If you're planning to make a new broth, the quality of ingredients you use is certainly important. However, equally vital is the loving care put into looking after the stock in the kitchen. Chemically, and to the human sense of taste, there's a huge difference between foods that have been cooked properly for a long time and those that haven't.

The flavours humans crave are easily achievable with the right care and attention. We've put a name to it these days – *umami* – but even just the 'taste of home,' as I like to refer to it, is present in these slow-cooked foods. There's something luxurious about a good-quality stock that provides its own body and strength, and you can't get that any other way. A stock is a means of utilising otherwise potentially lost ingredients. So, this is a waste-capturing – but, better yet, flavour-capturing – mechanism whereby flavour, instead of being lost, is regained to deliver comforting tastes reminiscent of grandmother's kitchen. Time spent in a real kitchen, making real stock, is time well spent.

One of the things that I always look for in a stock is a kind of a functional benefit to food, not just a flavor that comes from the mouthfeel that it can provide and ways of unlocking natural gelatin where available, or the absence of in certain cases. And this functional benefit is always something that gets brought into the dish very early on, enhanced through the process of cooking and then often reduced for making sauces at the end. You actually acquire that rich mouthfeel from a good stock and it's very evident that if you've used an inferior stock. That's partly down to the flavor, but also partly down to the functional benefit of it at the end.

Really there's no substitute for making sure you're simmering gently and skimming regularly to get something really clear. By getting that clarity of stock, you're getting the clarity of flavor as well and getting something to use as a building block.

I also look for mouthfeel. Gravy is something that stands out noticeably for me. If you're looking at a good-quality gravy, it will be thick, but there is a detectable distinction between flour thickness and natural gelatin thickness. Also, for beef enhanced with red wine, or a bourguignon of some sort, the effect is unmistakable. That's also where the anomalies in thickening enter and would lead to visual differences in clarity, or a loss of glossiness if you add flour when cooking out a roe or something similar. A profoundly different character arises when cooking and preparing stocks properly in a well-appointed kitchen. The result: authentic tastes and flavours you simply can't achieve any other way.



**2 RYAN SCHULTZ**  
RD&A SENIOR DIRECTOR,  
STOCKS & BROTHS, SAVOURY  
& DAIRY TASTE

Ryan's expertise from the lab demonstrates the power of layering technologies for limitless flavour directions.

My experience is from work in the lab and with the team, and I've seen the power of what these ingredients and systems can do by following a really authentic culinary-type process. These are very clean label taste elements that establish a great foundation for additional flavor systems or culinary systems that can be steered in limitless directions.

It's akin to a blank slate that chefs can use to develop their own unique product innovations. For instance, there are beef and chicken foundational tastes that come across with a great mouthfeel, or the underlying savoury and / or chicken profile for a chicken stock. Then one simply adds elements to direct the results as desired – toward a Vietnamese profile such as pho, for example – adding in the different spices that would go into that, such as ginger or star anise. A more traditional profile such as chicken parmesan is not off-limits either. In short, the chef does the steering to create unique products.

My favourite is a chicken bouillon we've layered in with multiple technologies to make a well-rounded, premium-tasting base that is ready to use. Instead of just being the stock itself with the high protein and high collagen content, we have built in vegetable concentrates or components that one would typically find in a mirepoix-type system. Then, additional flavour enhancements and savoury taste technologies are added to make a truly individual product. That not only helps in achieving the prize of product differentiation, it also offers the added benefit of thoroughly enhancing the dish's savoury notes. I use it in my homemade chicken soup to provide a much stronger impact for myself and my family.

Immune-support broths are another area with a bright future as a ready-to-drink beverage. They feature Wellmune® as well as the natural immunity benefits that people believe arise from using chicken stock as the base. Add in some vegetable and flavour components to make a great-tasting, premium product. One tip: folding in some interesting flavours, such as lemon and lavender, can take a broth in a completely fresh direction. There is a growing movement around sipping broths that is poised to develop in any number of ways, with immune support a core benefit coveted by consumers.

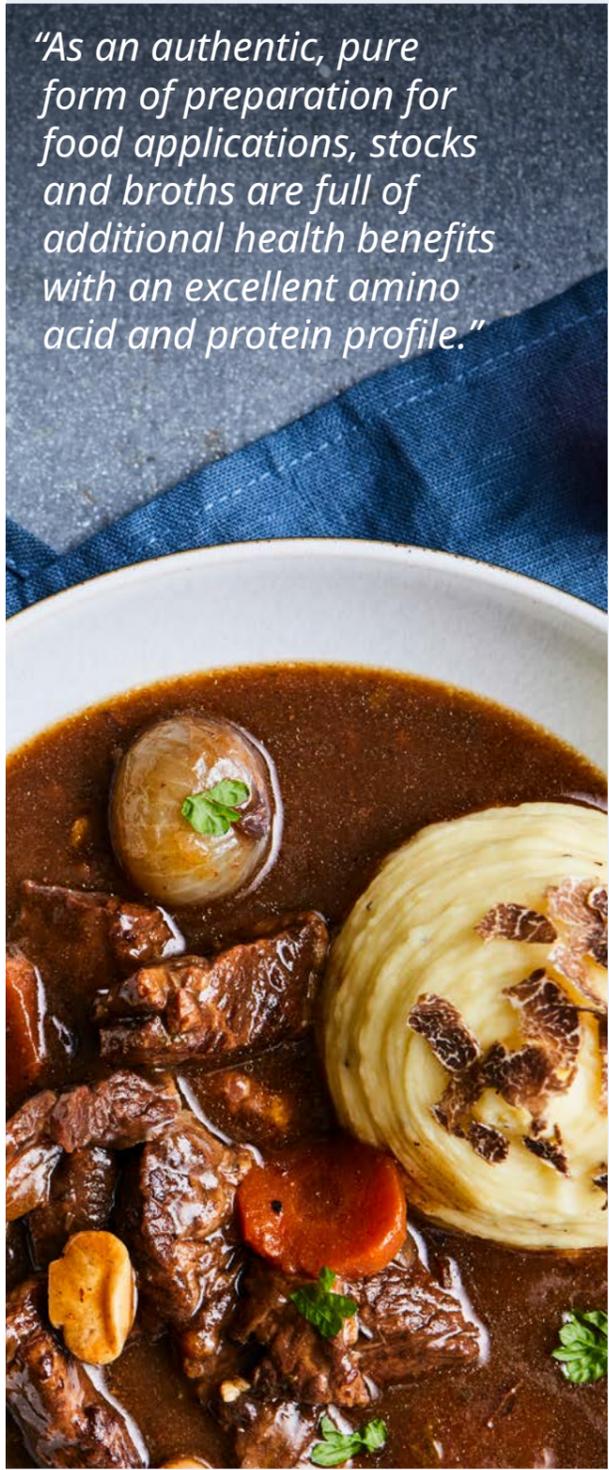
The stock development process is always a creative challenge. We have to collaborate with chefs all over the world to discover what's trending in each region and use those trends to innovate with our customers. We're able to layer various components from creation to product development, applications, culinary inspiration and support in ways that enable our customers to expand their business offerings with great food and beverage innovations.

The versatility and the depth of these technologies and our way of layering them, together with creation, product development, product applications, culinary inspiration and support throughout is what differentiates us. Being able to anticipate what our customers need, how they want to work with us and being flexible to meet those expectations are major points of strength for Kerry.

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*“As an authentic, pure form of preparation for food applications, stocks and broths are full of additional health benefits with an excellent amino acid and protein profile.”*



**3 RAHUL SHARMA**  
RDA MANAGER, STOCKS & BOUILLONS

**Rahul leverages the science of molecules to create great taste from real food for the plant-based sector.**

Increasingly, consumers don't want artificial or natural-identical material in their food – they want real food ingredients. As a co-product, rather than a by-product, of food manufacturing, stocks and bouillons have the from-food advantage. At Kerry, our innovative technology leverages our inhouse knowledge to extract all the taste from these co-products, meaning less biomass reverting to non-human consumption. We are immensely proud of the sustainability of Kerry's stocks and broths operation.

As an authentic, pure form of preparation for food applications, stocks and broths are full of additional health benefits with an excellent amino acid and protein profile. Stocks contain all-important collagen foundational for our muscles, our skin and the membranes that connect our muscles to our skin. Additionally, the amino acid profile for broth is fantastic. It's high in glutamic acid, glycine and leucine, a building block of your muscle fibres. Essentially, this is a sustainable, clean label innovation that delivers on health, nutrition and flavour.

This solution profile solves a litany of problems for customers. As our stocks and broths are concentrated versions of the 'real' food – just a water-soluble variant of the meaty bones of juicy beef, chicken or fish – the result is an authentic, pure form of food preparation that delivers nutritional benefits and can be applied to a vast range of foods and beverages.

We also leverage the science of molecules, taste and animal-based stocks to design vegetable stocks that beautifully complement meat-alternative and vegetable-meat products. For example, when mushrooms are blended with tomatoes and then cooked together, the result is a 'meatier,' more savoury profile that alleviates the 'off' taste of vegetable protein. Mushroom stocks can also help address these issues.

Similarly, manufacturers can utilise vegetable-based, beef, chicken and fish-flavoured stocks that provide intermediate – meaning a hint of taste instead of their own flavour – meat tonalities and flavour support in plant-based product development. When cooked with other ingredients, these intermediate products develop a wholly new profile. These include liquid stocks used in ham preparations, umami stocks used in the prepared meal segment or natural stock made from meaty bones and carcasses.

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**4** CHRIS HORRIDGE  
HEAD OF INNOVATION

Chris captures the power of simplicity as the basis for culinary creativity.

Within the Kerry business, we're using stocks in a multitude of ways. A key part of the Front End Innovation teams' role is making sure that not only do we stimulate debate by bringing to the table best-in-class products, but also having a good idea on how our product will go through the upscale process. We generally consult through that upscale process to support the team in creating a final concept that is as close to the original concept we created as possible. From a flavour perspective we're always looking at the new or new ways to do the traditional.

Quite often the stock or broth is there to support the other ingredients. If you're using very fresh, clean ingredients and process them minimally, you can get a very light clean and bright flavours. With stock and broth making, a major benefit is that you can take the by- and co-products of cooking and actually make them pop like you wouldn't imagine. Done well, stocks and broths can really lift a dish.

The thing for me about stock making is 'keep it simple'. Back in 2009 I earned a Michelin star along with my team with a cuisine based around 'nutrition' and we were known for very clean flavours. When it comes to stock we just used water, bones and relatively minimal cooking – less than an hour or so. That way we ended up with clean, pure meaty flavour that supported or lifted elements of the food – sauces in particular.

For instance, if we were making a white chicken stock we'd essentially get three kilos of chicken bones, cover with water, and bring to a gentle simmer for around 45 minutes. That gave us a very, very light clean flavour, that we could use as a base for our sauces.

Now, if we were going to make a brown chicken stock, we'd make the white chicken stock first, then refresh with lightly caramelised chicken bones, simmer for 30 mins and pass off. We'd end up with a beautiful, very light, flavourful brown chicken stock, and importantly a very, very clean and pure flavour profile. When it's reduced with a few other ingredients this light brown stock is a perfect base for a huge variety of light, restaurant-quality sauces.

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**5** CIAN LEAHY  
DIRECTOR OF CULINARY AT KERRY

Cian sees the possibilities in incorporating ethnic influences into familiar French and European flavours.

Stocks and broths in general tend to offer a strong measure of comfort. The method has been used for eons to build out mother sauces, from where you develop your other sauces as well as soups. One of the first things I learned in culinary school is when making stocks and broths you want to keep the ratios the same and then at the end, you might add in other products to take it in a different direction, but typically, from a culinary school perspective, you're going to keep these very traditional.

From an innovation perspective, we're seeing a lot more restaurant operators wanting to incorporate ethnic influences while keeping a foot in the familiar. For example, we're seeing miso being used a lot more as part of the stock or broth, as opposed to a finishing ingredient, in recipes like a classic minestrone soup made with a miso-forward broth for a unique twist. Similarly, we're seeing elevations of stocks and broths by applying different heat levels or more umami-forward palates with the Asian broths as a base compared to European or French style broths. Dashi, a lightly flavoured Japanese stock or broth that utilises kombu, a dried kelp, might be employed by chefs alongside dried bonito flakes and shiitake mushrooms to build flavour and umami, allowing you to end up with a broth that packs a flavour punch but remains delicate in appearance and on the palette.



From an innovation perspective, we're seeing a lot more restaurant operators wanting to incorporate ethnic influences while keeping a foot in the familiar.

The great thing with stocks and broths is that it was one of the original ways for utilising or limiting waste back of house – answering the question how can you utilise every part of the animal? In the first restaurant I worked in, I was preparing all the ingredients to make veal stock almost every day; veal beef bones that would have been roasted off and a typical mirepoix. Given that the chef had a lot of veal, stocks and broths allowed him to utilise every product, having the dish come full circle.

When I make a chicken stock at home, which is probably the stock that I would make most, I actually use the chicken wings. There's a lot of collagen in chicken wings and that provides body for the end stock. A few years ago it was very trendy to have high-collagen broths that add body – plus, there are some supposed health benefits to collagen. We have worked on a few broths at the intersection of afternoon beverages and broths by introducing caffeine or some more wellness-forward ingredients to not only have the feeling of satiety you get from drinking a nice warm broth, but also a nice little kick of caffeine. Certain cultures would drink a broth or have sipping broths, but now consumers in general are more open to this. The expectation is to be a bit more adventurous and the resulting products are delicious.

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*“In terms of innovation, we are starting to see clear soups and stocks in the supermarkets. I think that stocks alone really accentuate the final dish.”*



**6 REUBEN GOODMAN**  
EXECUTIVE CHEF – CULINARY  
DEVELOPMENT AND INNOVATION

**Reuben celebrates complexity and versatility in stocks and broths.**

I was trained French classic; that was my first introduction to soups and sauces, and that's the core of my portfolio. When I make a traditional French Jus it generally takes about three and a half days. That creates a master stock that I then use to make gravies, demi-glazes or anything from there. It's incredibly versatile and ever evolving, where every time I make a new one, I incorporate the old one and it just adds complexity. It imbues a flavour that you can't recreate in a hurry. That's the core of why it's so good: because of the time that goes into it.

What makes it a signature is respect for each of the ingredients. So first I'll start with a standard mirepoix – so onion, carrot, celery. I generally brown them in the oven at quite a high temperature. Once they start to caramelize, I'll put them in a pot with cold water and then I'll take my beef bones – generally stuff that has high amounts of collagen and bone marrow, so spinal cord, knee joints and hip joints. I'll roast those out as well before putting that in the pot and adding more cold water so it's just covered.

That's when I do things differently – this point is where a lot of chefs have their own take. I like to put in red wine during that initial process to help break down the complexity of those flavours, and keep it cooking for a few days on the back burner. Because collagen takes certain time and temperatures to break down and turn into gelatin if you try and do it too quickly, you don't get the longevity of the master stock or the intensity of the flavours. After going through this process, I reduce it and then I'll add balsamic if it needs acidity or anything else from there.

In terms of innovation, we are starting to see clear soups and stocks in the supermarkets. I think that stocks alone, the complexity and the way that they almost mirror the flavours that you're trying to capture, really accentuate the final dish. The ingredients really depend on what the finished product is going to go on. If it's for a Laksa or a soup, or to go over a beef or in a ramen, all of those will start in a different way based on the core ingredient. The umami, the saltiness, a little bit of acid – that's just the way when a stock is well balanced. It brings it all together and lifts what you're trying to showcase to really give it a premium feel. With these really strong foundations we've got a great platform from which to innovate and explore. Just like my stocks and broths are ever evolving in the home kitchen, we're discovering how stocks and broths can evolve in the marketplace in the early phases of adoption.

*“The umami, the saltiness, a little bit of acid – that's just the way when a stock is well balanced. It brings it all together and lifts what you're trying to showcase to really give it a premium feel.”*



## Bringing authenticity through Kerry's stocks and broths solutions

At Kerry, we balance consumer demands for clean label with functional, safe and sustainable solutions – without compromising on taste or nutrition.

Our portfolio includes a wide variety of kitchen-developed stocks, broths, concentrated broths, bouillons and broth chips. We develop our stocks, broths and bouillons using traditional cooking methods to help our customers deliver wholesome, authentic taste experiences.

### Pure Stock & Broth

Made from scratch using meat and bones, vegetables and herbs that are slowly simmered, strained and reduced – just like you would at home – with nothing but natural ingredients and time.

### Health Halo Ingredients

We are able to support many of the leading health claims such as organic, free-range, grass-fed, no antibiotics, hormone-free, no MSG, etc.

### Functional Benefits

Wellmune®, is clinically proven to help strengthen the immune system while GanedenBC30®, our patented probiotic, can add digestive support.

### Taste Solutions

Leveraging our pure stocks and broths as a foundation, we've designed a collection of speciality stocks and broths that deliver richer, higher impact savoury taste with pantry inspired ingredients.

### About Kerry

Kerry, the Taste & Nutrition company, offers solutions that nourish lives all over the world. From humble beginnings as an Irish dairy co-operative, Kerry has grown into a large international food industry leader, with offices in 32 countries, 151 manufacturing facilities and an employer to over 26,000 people globally, including over 1,000 food scientists. We bring to the table our strong food heritage, coupled with over 40 years of experience, global insights and market knowledge, culinary and applications expertise as well as our unique solutions to anticipate and address our customers' needs.

32

countries with Kerry offices

151

manufacturing facilities

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employees

1,000+

food scientists

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