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HD THE GREEN GODDESS

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It's popular in smart restaurants and now there's a cookbook full of its recipes. So why aren't we farming seaweed yet?

Maybe if it had been called sea vegetable, we would have eaten it sooner. But outside of Japanese restaurants, seaweed has rarely appeared on Australian plates. Until now. And if there are ever farms of waving fronds of seaweeds around the Australian coast, it will be mostly due to the persistence and research of that erudite mermaid, Dr Pia Winberg, and Coastal Chef, the new book of seaweed recipes she has inspired.

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Winberg has a PhD in marine ecology from the University of Wollongong, and was, until last year, the director of the Shoalhaven Marine and Freshwater Centre there. While maintaining links with the university, she now heads a **company**, Venus Shell Systems, which is working to take the science of marine biological systems and apply it commercially by creating a new Australian aquaculture industry: the sustainable growing and farming of seaweed and algae.

Globally, seaweed is the largest aquaculture production by volume, at more than eight **million** wet metric tonnes a year. (**China** is the largest producer of edible seaweeds, harvesting about five **million** wet tonnes annually, mostly for kombu, produced from hundreds of hectares of the brown seaweed Laminaria japonica). That translates to "$5 **billion** to $6bn a year, with some forms selling at $500 a kilogram'','' Winberg says. "We're currently importing $20 **million** worth a year, and last time I looked, that was growing at 30 per cent a year." At the moment, there is no money for investment in the industry. And this bemuses Winberg. "With the increasing size of the food bowl that is needed in the world, this is a serious crop for the future. And with a land girt by sea and clean waters — plus unique species — why can't we be innovative and on the forefront for once?" Seaweed isn't just delicious. It's highly nutritious, not just for humans, but for farmed fish, oysters and abalone, as well as land animals, chicken and cattle. In Ireland, seaweed is used to create arable land from rocky and poor soils, and is used in the cosmetics industry.

But while we might not have innovative venture capitalists, we certainly have innovative chefs. Seaweed, in various forms, has become a fashionable ingredient on some of our smartest menus: at Aubergine, Canberra, you can eat mulloway with a fine powder of different seaweeds, and smoked tuna served with a salad of wakame, celtuce and nori; at Orana, Adelaide, chef Jock Zonfrillo serves kingfish with sea lettuce and neptune's pearls. And when asked to provide recipes for Coastal Chef, Australian chefs didn't let the side down. Nineteen chefs from the north coast of NSW to Melbourne have contributed 50 recipes, from cocktails to dessert, using 28 different seaweeds. To someone whose only contact with seaweed is via nori rolls and sushi, and a distant memory of eating wakame in Tasmania, it's a revelation. There's wakame carpaccio, yuzu miso and blue **cheese** from David Campbell (Hungry Duck, Berry); bladderwrack rice noodle with king prawn, squid and ulva consomme and sea spaghetti from Danika Heron (Gowings Bar and Grill, Sydney); and chocolate pear tart with seaweed caramel popcorn ice cream from Emma-Kate Hoskins (Cupitt's Winery and Vineyard Kitchen, Ulladulla).

Melbourne's Victor Liong (Lee Ho Fook, Collingwood) contributed Moreton Bay bug tails in spicy Sichuan chilli oil. Liong has a history with seaweed. "I've used it in bits and pieces through my cooking career, first

when I was doing my apprenticeship with Haru (Inukai) at Galileo (in Sydney's Observatory Hotel). His cooking was half and half Japanese and French and he used a lot of seaweed, nori, wakame and the extracts. And then later when I worked at (Sydney's) Marque, Mark Best used it more subtly as an ingredient or a seasoning. I thought it was pretty interesting." When Liong agreed to contribute to the book, he was sent three types of seaweed. "We went through them and the red Irish moss was the one that stood out." In many places in Australia it's against the law to gather it from the wild, so most of the seaweed used in the book was imported. However, as Winberg points out, "harvesting is not an option in Australia because we don't have the abundant nutrients that the Atlantic has, for example, where it just grows so fast they can keep harvesting it". And that's why Australia needs seaweed aquaculture. For the book, they gathered 28 different seaweed types from 11 producers around the world. The exceptions to the no-harvesting rule are the introduced species wakame and a couple of local species in Tasmania, where the state government has encouraged sustainable harvesting.

Coastal Chef came about as a result of a conference of applied phycology (the study of seaweed and algaes) organised by Winberg this year. "(The conference was) about how can we use seaweed in the real world, not just science. To do that I thought we needed to reach out to the world beyond, and not just keep telling each other about our own work. So creating a book was one way of opening up and communicating to the rest of the world. That was the idea and I was lucky enough to meet a publisher and an editor, Garry Evans and Claudine Tinellis, who were very keen to pursue the idea." So what do seaweeds taste like? "People think all seaweeds taste the same but they all taste quite different," Winberg says. "They all have a umami flavour, but some are mild, some are high in iodine and iron and that affects the flavours. They're just like land crops: there is diversity in land crops in taste and application, (there's) the same diversity in seaweeds." Let's hope we soon have a seaweed farming industry so we can get into some of those flavours. In the meantime, we have the recipes. And the restaurants.

Coastal Chef: Culinary Art of Seaweed & Algae in the 21st Century, edited by Claudine Tinellis (Harbour Publishing, $39.95)

WHAT IS SEAWEED?

They are primitive organisms (not vegetables) belonging to a range of groups. Seaweed is a colloquial term, describing a **group** of about 10,000 species with distinctive properties. Red algae is the **group** with the highest diversity, containing over 6000 species, and green has the least diversity with about 1200 species.

BEST SEAWEEDS FOR CULINARY USE Nori: The king of the gourmet seaweeds, found on menus, and around your sushi roll, everywhere. Despite its green to purple colour, it is actually a red seaweed. Usually toasted to give a mild and salty taste.

Wakame: The most common kelp eaten, wakame is soft, with a gentle flavour compared with some of the thicker kelps. A nicely savoury seaweed, it is often used blanched and chilled in strips for salads.

Ulva: The classic sea green, known as sea lettuce or rockweed by coastal fishermen. Its umami flavours, high protein and trace elements as well as antioxidants make ulva an attractive choice for chefs. Use it in everything from stews to scrambled eggs.

Kombu: The broth, stock and dashi of seaweeds, kombu is strong and robust in nature. Despite its high level of diverse healthy sugars, kombu is very savoury in taste, and most often used for its rich flavours.

Irish Moss: The original source of carrageen and the extract used in traditional cough elixirs, Irish moss is a large, red seaweed with a very mild taste. In Canada, it is produced as the rainbow salad blend of Hana Tsunomata™.

Source: Pia Winberg

WHERE TO **BUY** SEAWEED: Selected supermarkets, health food stores and Asian grocery stores. Also: FUJI MART 34 Elizabeth Street, South Yarra Victoria.

TOKYO MART Shop 27, Northbridge Plaza, 133 Sailors Bay Road, Northbridge, NSW.

CLEANFISH AUSTRALIA 10 Baker Street Banksmeadow, NSW.

Open to the public Saturday 8am-midday.

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