

Halophytes



النباتات الملحية

The UAE's Secret Ingredient
for Climate-Resilient Cuisine

Halophytes

النباتات الملحية

The UAE's Secret Ingredient
for Climate-Resilient Cuisine

Authored by the partners of the **Nature-based Solutions project** in the UAE,
with special contributions from Sustainability Champion **Omar Shihab**

This book has been realised as part of the "Nature-based Solutions (NbS) for Climate, Biodiversity & People" project in the UAE, a multi-stakeholder initiative funded by HSBC Bank Middle East.

The project is a partnership between the Ministry of Climate Change and Environment (MOCCA), the Ministry of Economy (MoEc), the Environment Agency – Abu Dhabi (EAD), the Government of Umm Al Quwain, Emirates Nature-WWF and the International Center for Biosaline Agriculture (ICBA).

The project focuses on the protection, restoration and management of coastal ecosystems in the UAE, including mangroves, seagrasses and saltmarshes, as a key NbS to strengthen climate change mitigation, enhance biodiversity and open up benefits for society through opportunities that unlock blended finance to support ecosystem protection, Blue Carbon, ecotourism and food security, among other goals.



UNITED ARAB EMIRATES
MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT



UNITED ARAB EMIRATES
MINISTRY OF ECONOMY



هيئة البيئة - أبوظبي
Environment Agency - ABU DHABI



GOVERNMENT OF UMM ALQUWAIN



Made possible by





HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

List of contributors:

Sustainability Champion:

Omar Shihab | Restaurateur, Chief Sustainability Officer and Founder of BOCA

Technical content prepared by:

—— **Emirates Nature-WWF:**

Maha Al-Salehi | Manager – Nature Conservation and Economy

Clémentine Laurent | NbS Communications Consultant

Nidhi Chimnani | Communications Consultant

—— **International Center for Biosaline Agriculture (ICBA):**

Dionysia-Angeliki Lyra | Halophyte Agronomist

Mohammed Shahid | Geneticist

Rashyd Zaaboul | Modeler - Climate Change

Technical content reviewed by:

—— **Emirates Nature-WWF:**

Marina Antonopoulou | Chief Conservation Officer

Daniel Mateos-Molina | Head of Marine Conservation and Biodiversity

Andrew Gardner | Associate Director of Biodiversity Conservation

Mehr Amin | Head of Communications

—— **International Center for Biosaline Agriculture (ICBA):**

R. K. Singh | Head of Crop Diversification and Genetics Section

—— **American University in Dubai (AUD):**

Meis Moukayed | Clinical Scientist and Professor of Health and Life Sciences

—— **American Center of Psychiatry and Neurology (ACPN):**

Yasmine Haddad | Clinical Dietician at the

Recipes prepared by:

Chef Patricia Roig | BOCA

Chef Luca Cobre | Healthy Farm Eatery

Chef Kelvin Cheun | Jun's

Chef Ilias Doulamis | Conrad Dubai & Hilton Hotels

Chef Yugal Kishor | Reform Social & Grill

Chef Milan Jurkov | 21grams

Chef Pavan Chennam | HSBC

Citation of this book:

The Nature-based Solutions project in the UAE, *Halophytes: The UAE's Secret Ingredient for Climate-Resilient Cuisine*, 2024.

Summary

9	—	Foreword	28	—	Culinary inspirations
11	—	Introduction	29	—	Starters
13	—	What are Halophytes?	39	—	Mains
17	—	Benefits for people and planet	51	—	Desserts
18	—	An Ally Against Climate Change	55	—	What's next: a call to action
18	—	A Solution for Food Security			
18	—	A Good Source of Vital Nutrients			
20	—	Q&A: The Benefits of Eating Halophytes			
24	—	Climate-resilient cuisine			
25	—	The Transformative Power of Chefs			
25	—	The Versatility of Halophytes			
25	—	The Exploration of New Combinations			
26	—	Q&A: How to Cook Halophytes			

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Foreword



Laila Mostafa Abdullatif,
Director General at Emirates Nature-WWF

In the face of climate change and a growing population, we are pushed to re-evaluate many of the things we take for granted – such as food.

Food systems in the UAE are confronted by several pressing challenges. The majority of our food is imported from other parts of the world, leading to an unsustainably high environmental footprint and a lack of self-sufficiency when it comes to food production. This is compounded by the natural environment of our region, where freshwater is scarce, temperatures are extreme, and arable land is limited.

As environmental advocates, we can – and do – call upon the community to buy local, eat seasonal fruits and vegetables, and grow food wherever possible. Yet, putting these principles into practice is often easier said than done, especially when our choices are limited by what is available. To offer sustainable and scalable solutions to local food production, we are expanding our attention to unconventional agriculture.

As part of the 'Nature-based Solutions for Climate, Biodiversity and People' project in the UAE, we sought out halophytes: climate-resilient and salt-loving plants that grow naturally along the coasts of the UAE and can be produced commercially and at scale by local communities. Halophytes act as strong carbon sinks, capturing and storing carbon in their biomass and soil. They present numerous benefits for biodiversity, with roots and stems that serve as a haven for wildlife, providing shelter and food for invertebrates, birds and reptiles. Beyond this, halophytes can be used in food production as superfoods, green salt, fodder, and other by-products. They have been consumed by humans for centuries in other parts of the world. Yet, they remain largely untapped in the UAE – until now.

Over the past few months, we have invited leading culinary minds to invent inspirational gourmet dishes featuring the local halophytes *Salicornia* and *Arthrocaulon*, to help build excitement and acceptance for these enduring ingredients. **By creating a market for halophytes, we aim to support the local cultivation of these plants and boost agricultural innovation, which in turn can create alternative revenue streams for local communities, spark greater SME growth and entrepreneurship, and support economic diversification.**

We are delighted to present to the community these inspirational dishes – starters, main courses and desserts – along with our research and findings around the numerous benefits of locally grown halophytes.

I invite you to immerse yourself in the story of halophytes, and join us in elevating these 'humble' ingredients. Together, we can make a difference with every bite.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine



Dr Tarifa Alzaabi,

Director General at the International Center for Biosaline Agriculture (ICBA)

Halophytes are salt-loving plants that thrive in saline environments, such as coastal areas and salt-affected soils, making them invaluable in regions with limited access to fresh water.

Our exploration of their potential dates back to the establishment of the International Center for Biosaline Agriculture (ICBA) in 1999. Since then, we have studied halophytes not only as a source of food and feed, but also as a solution for utilizing high-saline water resources and restoring salinized lands.

Our research focuses on cultivating halophytes in both coastal and inland areas. This includes improving halophytic germplasm and establishing effective management practices, while also addressing other stages of the value chain. For example, we work to raise awareness around the utility and nutritional value of halophytes through market positioning, the development of halophyte-based food products, and community engagement events.

Through strategic partnerships and insightful projects, ICBA has gained a rich understanding of the value proposition of halophytes, especially as a food commodity that can drive local food innovation and contribute to national food security.

This experience has proved instrumental in supporting the Nature-based Solutions project, which aims to restore marine and coastal ecosystems in the UAE while unlocking socio-economic benefits for local communities. It highlights the potential to commercially expand the cultivation of native halophytes in saltmarshes, not only to enhance biodiversity but also to create new opportunities around their use as functional foods.

By integrating these climate-resilient and unconventional plants into our agricultural systems, we can pave the way for a more sustainable and food-secure future, bringing halophytes closer to the mainstream of sustainable food production.

Introduction

The cultivation of halophytic plants can present tremendous benefits for climate, sustainability, food security, and local communities in the UAE.

As part of the Nature-based Solutions project, a leading group of chefs, food and beverage professionals, and restaurateurs in the UAE have partnered with environmental charity Emirates Nature-WWF and the International Center for Biosaline Agriculture (ICBA) to lead a culinary exploration of two halophytes that grow naturally along the UAE coastline: *Salicornia sinus-persica* and *Arthrocaulon macrostachyum*.

This pioneering team is excited about the potential of halophytes as a new local ingredient in menus and for the industry as a whole, and looks forward to working with the UAE's vibrant culinary community to usher locally grown, climate-friendly halophytes into mainstream dining.

This publication reveals the many environmental and nutritional benefits offered by halophytes. It offers simple guidelines on how to cook with this incredibly versatile ingredient and pushes the boundaries of culinary genius with twelve inspiring masterpieces invented by renowned chefs – each featuring locally harvested halophytes.

Welcome to the beautiful world of halophytes – the UAE's secret ingredient for climate-resilient cuisine.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

What are halophytes?

Halophytes thrive naturally in saline environments like mangroves, saltmarshes, and arid deserts, representing an untapped agricultural resource. These salt-loving plants have evolved remarkable adaptations, such as salt exclusion, salt excretion through specialized glands, and ion compartmentalization to cope with extreme salinity.

Species like *Salicornia sinus-persica* and *Arthrocaulon macrostachyum* that grow locally in the UAE, show potential as "zero-mile" crops. *Salicornia* has been consumed worldwide for centuries, and can be used fresh, in oils, or as protein-rich meals.

These resilient plants offer promising solutions for food security and sustainable agriculture in arid and saline regions

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Special adaptations to cope with salinity

Halophytes have developed specialised mechanisms to survive in high-saline environments. These adaptations include:

- Exclusion of salts at the root level
- Excretion of salts from salt glands, bladders and hairs
- Partitioning of salts in compartments, like vacuoles at the cell level predominant mechanism in the case of *Salicornia sinus-persica* and *Arthrocaulon macrostachyum*
- Production of antioxidants as a defense mechanism to neutralize highly reactive chemicals, making them less reactive to protect halophytes from the oxidative stress caused by the high salinity levels.

Halophytes around the world

Salicornia is possibly the most popular salt-loving plant worldwide, also known as samphire, sea beans, sea asparagus, glasswort, and pickleweed. It has been widely foraged by local communities and consumed as traditional and seasonal foods in various cuisines for centuries. *Salicornia* and other halophytes have shown enormous potential as crops for human consumption. Bright green in colour, halophytes are crispy in texture and pleasantly bitter to taste. They can be eaten fresh or steamed, squeezed into cooking oil, or ground into high-protein meals.

Even though several native species of halophytes are found on inland sabkhas and along the coastline of the UAE, they do not appear in historic references to local food culture. There are, however, records of halophytes being foraged by camels and other ruminants.



A.



B.



C.

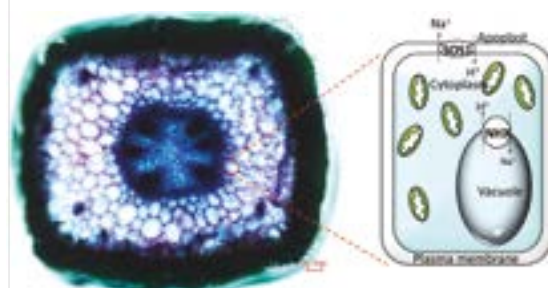


D.

A and B: Quinoa, a facultative halophyte capable of producing grain even when irrigated with high salinity (seawater).

C and D: Salt bladders located at both the upper and lower leaf surfaces. Salt bladder density is very different between young (C) and old (D) leaves¹.

E: Ion compartmentalization in vacuoles of *Salicornia* cells. In this sense, the cytoplasm and organelles of the cell are protected from salt².



E.

1. Bonales-Alatorre, E., Shabala, S., Chen, Z.H. and Pottosin, I., 2013. *Reduced tonoplast fast-activating and slow-activating channel activity is essential for conferring salinity tolerance in a facultative halophyte, quinoa*. Plant Physiology, 162(2), pp.940-952.

2. Cárdenas-Pérez, S., Piernik, A., Chanona-Pérez, J.J., Grigore, M.N. and Perea-Flores, M.J., 2021. *An overview of the emerging trends of the Salicornia L. genus as a sustainable crop*. Environmental and Experimental Botany, 191, p.104606.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

A closer look at

Halophytes in the UAE

Salicornia sinus-persica plants
in Umm Al Quwain



Salicornia sinus-persica is an annual halophytic species. The plants grow prostrate along the ground, as well as erect. Their simple or branched stems are succulent, hairless, and appear to be jointed. Many ecotypes are green, but for some, their foliage turns red in autumn. Older stems may be somewhat woody at the base.

Salicornia sinus-persica completes its growth cycle within a year; this means that seeds drop from the mature plants in autumn and germinate in winter. Then, seedlings grow vegetatively and plants start maturing till the summer season kicks off, when they shed seeds again.

Arthrocaulon macrostachyum plants
in Umm Al Quwain



Arthrocaulon macrostachyum is a perennial woody saltmarsh shrub that usually grows erect, up to 150 cm tall, and sometimes prostrate along the ground. It is usually richly branched, with fleshy segments that are glaucous or yellowish green. Based on literature, it flowers in autumn and drops seeds later.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Benefits for people and planet

Halophytes are powerful tools in addressing climate change and ensuring food security. Thriving in saline environments, they act as carbon sinks, protect biodiversity, stabilize soils, and require no freshwater for growth. Nutritionally rich, halophytes like Salicornia and Arthrocaulon provide vitamins B12 and C, essential minerals, and antioxidants while being low in fat and sugar.

Their cultivation supports sustainable agriculture in arid regions, reduces dependence on fresh water, and offers alternative incomes to rural communities. With their potential to mitigate climate impacts and enrich diets, halophytes exemplify Nature-based Solutions for a resilient future.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

An Ally Against Climate Change

Across the world, climate change is reshaping weather patterns and leading to more extreme weather events – like the recent floods experienced in the UAE. Impacts such as extreme drought, record-breaking storms, ocean acidification and others, threaten our planet's biodiversity and contribute to habitat loss, with direct consequences for our food and agricultural systems.

Halophytes help mitigate some of these impacts and build our resilience to climate change.

- **Halophytes grow well in high-saline environments** – with specialized mechanisms to tolerate or even utilize salt in their growth and metabolism.
- **Halophytes act as strong carbon sinks** – removing carbon from the atmosphere and storing it within their biomass and the soil below.
- **Halophytes contribute to biodiversity** – providing shelter and food, and serving as nesting and breeding grounds for a wide range of living organisms such as crustaceans, insects, gerbils, and birds.
- **Halophytes contribute to soil health and stability** – their roots bind soil particles together, reducing erosion and increasing soil stability. They also trap and stabilise sediments, filter pollutants and enrich the soil with nutrients through cycling.
- **Halophytes are climate-resilient** – they tolerate high salinity and a wide range of temperatures caused by tidal cycles and seasonal changes. They can also adapt to sea-level rise since they maintain soil elevation relative to sea level.
- **Halophytes contribute to sustainability** – due to their ability to support ecosystem health, provide essential services, and adapt to environmental changes without requiring intensive human intervention. By utilizing saline water for cultivation, these crops reduce the strain on freshwater supplies.

A Solution for Food Security

The integration of climate-resilient crops into national strategies is crucial to safeguard local communities and ensure food security in the UAE.

Since halophytes are well-suited to withstand harsh environmental conditions, including high salinity and water scarcity, they are ideal candidates for unconventional agriculture in desert environments. They can be harvested by local and rural communities in saltmarsh habitats, introducing new alternative sources of income for farming communities, while also repositioning these habitats as productive and worthy of conservation.

Halophytes were identified as a new source of ingredients through the use of Nature-based Solutions, a holistic approach to conservation that focuses on protecting and restoring ecosystems to address social challenges, while simultaneously providing human well-being and biodiversity benefits. The initial success of this approach in advancing innovation and sustainability of local food production points to exciting future possibilities for agriculture and conservation alike.

A Good Source of Vital Nutrients

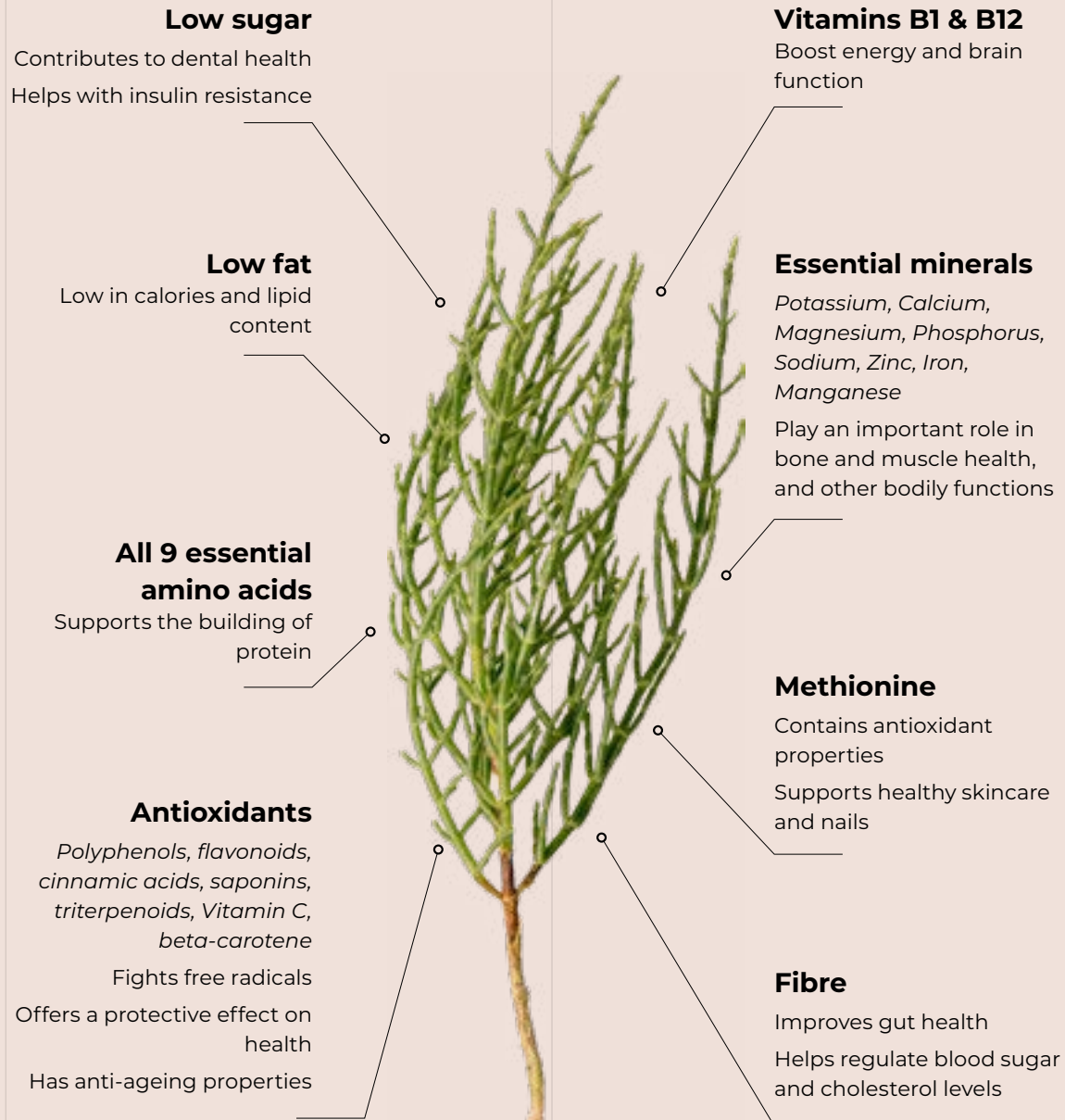
Both *Salicornia* and *Arthrocaulon* are characterized by low protein, low sugar and low-fat content. They are good sources of minerals, contain all 9 essential amino acids, and are rich in antioxidants (polyphenols, flavonoids, cinnamic acids, saponins, triterpenoids) when consumed in raw form.

- **Salicornia** is a good source of Vitamin C and Vitamin B complex, especially B1 and B12.
- **Arthrocaulon** provides fibre and is an excellent source of Vitamin C. It is also rich in methionine and total amino acids.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

The Nutritional Benefits of Halophytes



Salicornia and Arthrocaulon salts are characterized by high sodium (Na) content. Although studies showed that Salicornia salt may have a protective effect on vascular dysfunction and hypertension, individuals suffering from high blood pressure or other chronic illnesses should consult with a physician for recommendations on safe consumption.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Q&A

The Benefits of Eating Halophytes

This section explores the benefits of consuming the fresh tips of Salicornia and Arthrocaulon. The values provided in this section are based on a fresh weight basis per 100 grams, and are based on the nutritional analyses conducted as part of the Nature-based Solutions project.

Q. What are the differences in nutritional benefits between Salicornia and Arthrocaulon?

Salicornia is a good source of Vitamin C and Vitamin B complex, especially B1 and B12. Arthrocaulon provides fibre and is an excellent source of Vitamin C. It is also rich in methionine and total amino acids.

Q. Which part of Salicornia is the most nutritious?

The fresh tips and seeds of Salicornia are rich in vitamins, minerals, and antioxidants, and contain all 9 essential amino acids. While the seeds are more nutritious, the tips are easier to harvest and more commonly used as food³.

Q. How many calories are in the fresh tips of Salicornia and Arthrocaulon?

The fresh tips of local Salicornia species have 46 kcal per 100 grams, roughly equivalent to the calories in a medium-sized fresh tomato, while the fresh tips of local Arthrocaulon species have 63 kcal per 100 grams, similar to two large sized fresh carrots, making them a light and great addition to a balanced and nutritious diet.

Q. How many carbs are in the fresh tips of Salicornia and Arthrocaulon?

Salicornia is considered a low-carb (non-starchy) vegetable. Its fresh tips have 5.5 grams of carbs per 100 grams. The fresh tips of Arthrocaulon have 6.2 grams of carbs per 100 grams.

Q. How much protein is in the fresh tips of Salicornia and Arthrocaulon?

Both Salicornia and Arthrocaulon are considered low-protein vegetables. Their fresh tips consist of only 1.5 and 2.9 grams of protein per 100 grams, respectively.

Q. Do the fresh tips of Salicornia and Arthrocaulon contain all 9 essential amino acids?

Nutritional analyses show that both halophytes have all 9 essential amino acids. Amino acids are fundamental molecules that make up proteins. Our body uses amino acids to make hormones, build muscles, and repair tissue. The body cannot synthesize essential amino acids, which can be obtained through food.

Q. How much fibre is in the fresh tips of Salicornia and Arthrocaulon?

The fresh tips of Salicornia have 1.5 grams of fibre per 100 grams, which is 5% of daily value of fiber while the fresh tips of Arthrocaulon have 3 grams of fibre per 100 grams, which is 10.7% of daily value (DV⁴) of fiber.

Fibre is good for improving bowel movement and gut health. It helps regulate blood sugar and cholesterol levels, which in turn reduces the risk of Type 2 diabetes, as well as colon and cardiovascular diseases.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Q. Do the fresh tips of *Salicornia* and *Arthrocaulon* have sugar?

Salicornia is considered a vegetable with low sugar content. Its fresh tips have 4 grams of sugar per 100 grams. The fresh tips of *Arthrocaulon* have 3.2 grams of sugar per 100 grams.

Q. What is the main health concern when it comes to consumption of *Salicornia* and *Arthrocaulon*?

Salicornia and *Arthrocaulon* salts are characterized by high sodium (Na) content. Excessive sodium in the body is known to be responsible for raising blood pressure, which is a major cause of cardiovascular diseases. However, studies showed that *Salicornia* salt may have a protective effect on vascular dysfunction and hypertension, because beyond NaCl, it contains other minerals (Ca, Mg, K), vitamins, polysaccharides, proteins and antioxidants such as furfural, p-coumaric and trans-ferulic acid compounds, which may counteract sodium's effect on blood pressure, compared to table salt that comprises mainly of NaCl (90-99 %) ^{5,6}.

In addition, various cooking techniques can decrease the salt content in fresh tips such as steaming, blanching and boiling. Nonetheless, individuals suffering from high blood pressure or other chronic illnesses should consult with a physician for recommendations on safe consumption.

3. *Salicornia* seeds also have high protein and fiber content 18 and 9.5 grams for every 100 grams respectively. They are also rich in omega-3 & -6 fatty acids. However, *Salicornia* seeds are very small in size (less than 2mm) and there are currently challenges in the seeds' harvest and collection, due to the lack of improved germplasm producing bigger seeds and customized machines to collect the seeds. The seed collection is done manually in most of the cases.

4. The %DV is how much a nutrient in a single serving of an individual packaged food contributes to your daily diet. Daily Value (DV) is based on a 2000 kcal diet. Your Daily Values may be higher or lower depending on your daily calorie needs. 5% or less (DV) is considered a low source of the nutrient; 10% or less (DV) is considered a good source of the nutrient; 20% or more (DV) is considered high source of the nutrient

5. N. Panth, S.H. Park, H.J. Kim, D.H. Kim, M.H. Oak, 2016. *Protective effect of *Salicornia europaea* extracts on high salt intake-induced vascular dysfunction and hypertension*, Int. J. Mol. Sci. 17 (7) 1176. <https://doi.org/10.3390/ijms17071176>

6. S. Sood, L. Methven, D.P. Balagiannis, Q. Cheng, 2024. *Can samphire be the new salt? Understanding the potential of samphire harvested from the UK coastline*, Food Chem. 438 138065. <https://doi.org/10.1016/j.foodchem.2023.138065>



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Q. How much salt is in the fresh tips of Salicornia and Arthrocaulon?

Salicornia and Arthrocaulon are rich in salt. The fresh tips of Salicornia contain 4.7 grams of salt per 100 grams in raw form.

The fresh tips of Arthrocaulon contain 4.0 grams of salt per 100 grams in raw form.

It is worth noting that 'samphire salt' from halophytes may have a protective effect on vascular dysfunction and hypertension as compared to table salt.

Q. What is the maximum recommended intake of salt in Salicornia and Arthrocaulon that humans should not cross?

For adults, the World Health Organization (WHO) recommends less than 5 grams of salt per day (just under a teaspoon). For children aged 2–15 years, WHO recommends adjusting the adult dose downward based on their energy requirements.

Q. Is the salt content in the fresh tips of Salicornia and Arthrocaulon within the Daily Recommended Intake (DRI) limit?

Based on our study, consuming 100 grams of Salicornia or Arthrocaulon fresh tips would correspond to a salt intake of less than 5 grams, which is within the recommended DRI limit.

One would typically eat a single cup of Salicornia and Arthrocaulon fresh tips in raw form, which is around 30 grams. In this case, the salt intake comes to approximately 1.4 grams, which is less than the daily recommended intake.

The salt content of fresh tips can be reduced through wet culinary processes such as steaming, blanching and boiling.

Q. Can pregnant women consume the fresh tips of Salicornia and Arthrocaulon?

Yes, as long as consumption is within the DRI limit, follows a balanced diet and no allergies are detected. Pregnant women should always consult with a physician for recommendations on safe consumption, especially in cases of hypertension or preeclampsia.

Q. Can children consume the fresh tips of Salicornia and Arthrocaulon?

Yes, as long as consumption is within the DRI limit, follows a balanced diet and no allergies are detected. Always consult a physician for recommendations on safe consumption.

Q. Are the fresh tips of Salicornia and Arthrocaulon suitable for a keto diet?

Both halophytes can be included in a keto diet because of their low-carb and low-sugar content.

Q. Can the fresh tips of Salicornia and Arthrocaulon support vegan-based diets?

Yes, halophytes are plants and support vegan-based diets.

Q. How do the fresh tips of Salicornia and Arthrocaulon taste?

The tips of Salicornia taste salty, a bit bitter and are juicy and crispy. Arthrocaulon tastes the same as Salicornia, however, it has a slightly tougher, nutty undertone and is more fibrous. Due to the high glutamic acid content in both halophytes, they are characterized by a "pleasant savoury" flavour known as "umami."

Q. Do the fresh tips of Salicornia and Arthrocaulon help fight cancer?

Both halophytes contain polysaccharides, phenolics, flavonoids, coumarins, saponins, and alkaloids that have shown promising activity for cancer prevention and treatment ^{7,8,9,10}.

7. Mohammed, H.A., Emwas, A.H. and Khan, R.A., 2023. *Salt-tolerant plants, halophytes, as renewable natural resources for cancer prevention and treatment: roles of phenolics and flavonoids in immunomodulation and suppression of oxidative stress towards cancer management*. International Journal of Molecular Sciences, 24(6), p.5171.

8. Custodio, L., Garcia-Caparros, P., Pereira, C.G. and Castelo-Branco, P., 2022. *Halophyte plants as potential sources of anticancer agents: a comprehensive review*. Pharmaceutics, 14(11), p.2406.

9. Ksouri, R., Ksouri, W.M., Jallali, I., Debez, A., Magné, C., Hiroko, I. and Abdelly, C., 2012. *Medicinal halophytes: potent source of health promoting biomolecules with medical, nutraceutical and food applications*. Critical reviews in biotechnology, 32(4), pp.289-326.

10. ElNaker, N.A., Yousef, A.F. and Yousef, L.F., 2020. *A review of Arthrocnemum (Arthrocaulon) macrostachyum chemical content and bioactivity*. Phytochemistry Reviews, 19, pp.1427-1448.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Climate-resilient cuisine

Halophytes are transforming gastronomy, offering endless possibilities for sustainable cuisine. These versatile, salt-tolerant plants pair well with seafood and fish but extend to salads, soups, ceviches, pestos, and even desserts. They can be used fresh, steamed, or pickled, blended into detox juices, or crushed into seasoning powders. Chefs are exploring ways to balance their salty, fibrous nature while unlocking their culinary potential.

By incorporating halophytes, restaurants can embrace climate-resilient ingredients, support local agriculture, and inspire sustainable dining practices, turning these unique plants into staples of modern cuisine.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

The Transformative Power of Chefs

The Nature-based Solutions project calls on chefs, restaurants, and the public to start exploring the potential that halophytes offer gastronomy, as a new and local nutritional source.

Chefs are part artists and part artisans. Their artisanal skills shine in producing delectable dishes consistently. They act as artists, helping us envision combinations that were previously unimaginable, influencing culture and tradition. The buy-in of chefs and their support for this sustainable ingredient could unlock unique possibilities and advance our culinary culture. It's time to harness the transformative power of chefs and bring climate-resilient cuisine to life.

The Versatility of Halophytes

Halophytes, specifically *Salicornia* and *Arthrocaulon*, are highly versatile. Due to their high salt content, they pair excellently with seafood and fish. That is traditionally the go-to combination that chefs consider when considering halophytes. The applications, however, can be limitless.

The fresh tips can be enjoyed in simple or elaborate salads, soups, or boiled; its bitter taste makes it a great alternative to asparagus, pairing well with eggs and mushrooms. There are numerous potential applications in ceviches, poke bowls, detox juices, pickling, fish and seafood dishes, and some meat dishes like lamb. Local *Salicornia* and *Arthrocaulon* can be eaten fresh, steamed, blanched, or boiled. They are often pickled to extend shelf life and can even be blended into refreshing detox juices or infusions.

Through blending, blanching, shocking, puréeing, dehydrating, crushing into a seasoning powder, and sautéing, the possibilities of incorporating halophytes into various dishes and cuisines are limitless.

The Exploration of New Combinations

Leading chefs of the UAE are excited about the potential of halophytes as a new local ingredient in their menus and for the industry as a whole. Prominent names in the industry, such as Patricia Roig, Executive Chef at MICHELIN Green Star restaurant BOCA, Kelvin Cheung, Chef Partner of *MENA's 50 Best Restaurants Jun's*, and award-winning Chef Luca Cobre of Healthy Farm Eatery are already exploring and expanding the use of the halophyte *Salicornia* in its fresh form in salads, in ceviches as a dressing and even in a pesto form. They are also using it as a crunchy fried tempura alongside fish dishes, and in cakes and desserts.

Food and beverage specialists believe that halophytes can become a prominent ingredient in dishes and even extend to beverages. Some have started using *Salicornia* as a garnish, and a healthy and salty detoxifying drink component.

Finding ways to work with the fibrous nature of halophytes, balancing flavours, and being mindful of the salty nature of these coastal plants is essential for a delicious and successful execution.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Q&A

How to Cook Halophytes

Q. How do you check for freshness?

Look for halophytes that are glossy, crunchy, and have an even colour.

Q. What can you do with the rest of the *Salicornia* and *Arthrocaulon* plants?

The tips can be used for garnishing and decoration, while the thicker parts can be blended into creams, sauces, or even dehydrated to make a salty powder.

Q. What is the best way to prepare *Salicornia* and *Arthrocaulon*?

When fresh, the best way to enjoy them is as they are—the texture is unique and interesting.

Q. Should you store your *Salicornia* and *Arthrocaulon* in water?

No, it is better to keep them spread out on a tray with a kitchen cloth away from the fridge's fan.

Q. How can you reduce the salt content of *Salicornia* and *Arthrocaulon*?

The salt content itself cannot be reduced, unless it is cooked. Blanching can make them less salty but will also soften the texture. Another option is to incorporate them into creamy recipes without adding extra salt.

Q. Can you tenderize *Salicornia* and *Arthrocaulon*? How?

The flesh can be tenderized by blanching or poaching, but it's recommended to keep the stem's roughness if it has any.

Q. How long can *Salicornia* and *Arthrocaulon* be stored?

Under good conditions, when very fresh, they can last up to two weeks in the fridge before starting to wilt.

Q. How do you store *Salicornia* and *Arthrocaulon* long-term?

Spread them out on a tray with a kitchen cloth, away from direct light for fresh storage. Pickling is a good option for longer preservation.

Q. Can you freeze *Salicornia* and *Arthrocaulon*?

Yes, but only if they will be used in recipes where texture and appearance aren't important. After thawing, they will lose their texture and become watery.

Q. What are the best cooking methods for *Salicornia* and *Arthrocaulon* at home?

Stir-frying them in seafood recipes adds a nice flavour to the dish. Eating halophytes raw is also very appealing.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Culinary inspiration

UAE's chef community innovated a collection of creative starters, mains and desserts using locally harvested halophytes to demonstrate the endless possibilities of cooking with this versatile ingredient. We are delighted to share these with our wider community.

29 — Starters

- 29 — Salicornia & Seaweed Salad, Al-Ain Cherry Tomatoes
- 31 — Arthrocaulon Falafel
- 33 — Scallop Carpaccio and Salicornia
- 35 — Grilled Asparagus, Salicornia Cream, Arthrocaulon Dressing
- 37 — Grilled Gulf Prawns with Salicornia and Bell Pepper Crema

28

39 — Mains

- 39 — Salicornia Orzo and Stracciatella Cheese
- 41 — Salicornia Shrimps 'Quinotto'
- 43 — Arthrocaulon "Ravioli" with Camel Cheese
- 45 — Scallops & Arthrocaulon
- 47 — Pan-seared Lamb Chops with Salicornia and Mint Pesto
- 49 — Olive Oil Poached Seabass, Celeriac Puree, Olive Tapenade, Salicornia Chimichurri, Braised Salicornia

51 — Desserts

- 51 — Gluten-Free Baked Salicornia and Camel Cheesecake
- 53 — Salicornia Sponge

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Salicornia & Seaweed Salad, Al-Ain Cherry Tomatoes

**Chef Patricia Roig**

Executive Chef, BOCA

29

About the dish:

Salicornia and seaweed salad, shredded lettuce, avocado, sesame dressing and cherry tomatoes.

How to prepare the Halophyte:

In this salad, the Salicornia is presented in its original way, fresh and raw, using fresh tips to enjoy the texture and saltiness. The hardest part of the Salicornia is dehydrating to make Salicornia salt, which will be used to season the avocado.

Chef's inspiration:

This is a fresh salad with so many good qualities, as the combination of Salicornia and seaweed makes it full of nutrients and amino acids. In addition, the pieces of avocado will be coated in Salicornia powder, so they won't need any additional salt and offer a creaminess that contrasts with the crispy tips. At the same time, the umami and acidity from the tomato will balance the bitterness and saltiness of the Salicornia.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Arthrocaulon Falafel

**Chef Luca Cobre**

Executive Chef, Healthy
Farm Eatery

About the dish:

A regional favourite, adding Arthrocaulon to the falafel mix gives the final dish a distinct dimension of saltiness and earthiness.

How to prepare the Halophyte:

The Arthrocaulon is blanched and then ice-shocked. It is then added to the chickpea paste along with shallots, parsley, and garlic to make the final paste that's ready to be fried.

Chef's inspiration:

A straightforward and accessible dish to all, filling and hearty.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Scallop Carpaccio and Salicornia

**Chef Ilias Doulamis**

Culinary Director
at Conrad Dubai, and
Hilton Regional Chef
For Arabian Peninsula

About the dish:

Thinly sliced scallops served on the shell with citrus dressing, Salicornia salt, salad, and ice cream.

How to prepare the Halophyte:

Dehydrated Salicornia is blended with seaweed to make a seasoning. A simple salad dressing accompanies the dish, adding crunchiness and texture. Ice cream made from Salicornia adds a finishing touch.

Chef's inspiration:

I chose this combination to highlight the delicate sweetness of the raw scallop, with a kick of bright acidity from the citrus dressing. The Salicornia salt adds a subtle brininess that mirrors the ocean's natural flavours. The salad brings freshness, and the ice cream introduces a contrasting creamy texture, creating a balanced dish that is both refreshing and elegantly complex.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



Credit: Emirate Nature-WWF



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Grilled Asparagus, Salicornia Cream, Arthrocaulon Dressing

**Chef Patricia Roig**

Executive Chef, BOCA

35

About the dish:

Grilled fresh asparagus, Salicornia and tofu cream, Arthrocaulon dressing

How to prepare the Halophyte:

The base is a cream of blanched Salicornia and tofu, which will help to balance the bitterness and saltiness, and is simultaneously a perfect dip for the asparagus. In the dressing, we will find the tender tips of Arthrocaulon that are crispy and salty, with olive oil and vinegar used to season the whole dish.

Chef's inspiration:

This is a dish where we use land and what we can also call "sea asparagus", so it's an exciting way to combine the two and do a vegan surf and turf. The grilled asparagus will be dressed with a sharp and crispy dressing, including small bites of dates that will balance the whole dish with the sweet addition.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Grilled Gulf Prawns with Salicornia and Bell Pepper Crema

**Chef Milan Jurkovic**Head Chef at 21grams |
Urban Balkan Bistro**About the dish:**

Grilled prawns are seasoned with a homemade spice blend and paired with a bell pepper and walnut crema alongside crunchy stir-fried Salicornia from Umm Al Quwain.

How to prepare the Halophyte:

Salicornia is rinsed in cold water and stir-fried for one minute to keep it crunchy.

Chef's inspiration:

Salicornia brings a vibrant, salty punch that perfectly ties together the dish's sweet and spicy notes. It makes every bite a celebration of the region's rich, diverse flavours.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Salicornia Orzo and Stracciatella Cheese

**Chef Patricia Roig**

Executive Chef, BOCA

About the dish:

Orzo with Salicornia pesto, stracciatella, Arthrocaulon, and walnut crumble.

How to prepare the Halophyte:

The pesto is a traditional one, where we blend all the ingredients to make a creamy mix. The only difference is the substitution of basil for the Salicornia and the addition of dill to compensate for the bitterness with the aniseed aroma.

In this case, for the Arthrocaulon crumble, the Salicornia is used as a seasoning, first dehydrated and then made into powder. It is strong enough to be mixed in small amounts to the crumble mix and give all the saltiness to enhance the flavours.

Chef's inspiration:

This is a way to make a pasta dish rich in halophyte flavours. At the same time, the cheese and olive oil in the pesto help to make a creamier and milder flavour while still keeping the original taste of the Salicornia.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Salicornia Shrimps 'Quinotto'

**Chef Luca Cobre**Executive Chef, Healthy
Farm Eatery**About the dish:**

A take on risotto, made with quinoa, Salicornia, and grilled shrimp.

How to prepare the Halophyte:

There are two different applications of Salicornia. For the first method, after the halophyte is blanched and then ice-shocked, it is chopped and sautéed in a pan over medium heat. The second form is pesto. A food processor is used – start with coarse salt and garlic and then add almond powder, Salicornia, cheeses, and oil to get to a smooth green form.

Chef's inspiration:

A hearty and healthy dish combining three of my favourite ingredients: Salicornia, quinoa, and Arabian Gulf shrimp.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Arthrocaulon “Ravioli” with Camel Cheese

**Chef Luca Cobre**Executive Chef, Healthy
Farm Eatery**About the dish:**

Pasta made from scratch, Salicornia seeds, creamy filling with Arthrocaulon, and camel and parmesan cheese.

How to prepare the Halophyte:

Toasted Salicornia seeds are added to the dough mixture, and the Arthrocaulon is sauteed with the garlic and onion, then later chopped and mixed with the cheese blend to make the ravioli filling.

Chef's inspiration:

A delicious recipe to prepare a classic Italian “ravioli” with halophytes that give it a delicate briny taste.

43

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Scallops & Arthrocaulon



Chef Kelvin Cheung
Executive Chef, Jun's

About the dish:

Seared scallops with tender Arthrocaulon, compressed local melon, fermented brown butter, and charred spiced pineapple.

How to prepare the Halophyte:

The Arthrocaulon is blanched briefly to retain its vibrant colour and crisp texture, then lightly sautéed. The sauce is made of pineapple juice fermented and reduced with brown butter to enhance its natural brininess. The melon was compressed and lacto fermented for 72 hours to give umami and complexity to balance the sweetness of the scallop.

Chef's inspiration:

I recreated this Salicornia dish to highlight its unique salinity and earthiness, exploring its versatility in different culinary applications.

45

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Pan-seared Lamb Chops with Salicornia and Mint Pesto

**Chef Yugal Kishor**Head Chef, Reform
Social & Grill

47

About the dish:

Pan-seared lamb chops with Salicornia and mint pesto combine rich, savoury flavours with a fresh, herbaceous touch.

How to prepare the Halophyte:

Salicornia is briefly cooked to keep its bright colour, then mixed into a smooth pesto with mint, parsley and Parmesan cheese to bring out its unique, salty taste.

Chef's inspiration:

This dish combines the rich taste of lamb with Salicornia's fresh, salty flavour, perfectly blending land and sea.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Olive Oil Poached Seabass, Celeriac Puree, Olive Tapenade, Salicornia Chimichurri, Braised Salicornia

49

**Chef Pavan Chennam**

Chef at HSBC

About the dish:

Seabass cooked with Olive oil, paired with pickled baby beets from our garden, Salicornia prepared two ways and a tapenade of Kalamata olives.

How to prepare the Halophyte:

The Salicornia was flash poached and paired with parsley, onion, garlic, Dijon mustard, lemon zest and bird's eye chili to create a spicy chimichurri sauce with an undertone of natural saltiness from the Salicornia. The Salicornia was also braised with oil and butter, and the same was used to braise the fish, adding a crunch to the overall dish.

Chef's inspiration:

Local ingredients are still finding a foothold in the culinary landscape. Halophytes offer an amazing opportunity to showcase their versatility in a variety of dishes.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Gluten-Free Baked Salicornia and Camel Cheesecake

**Chef Luca Cobre**

Executive Chef, Healthy Farm Eatery

About the dish:

A delightful twist on a savoury ingredient featuring local camel milk.

How to prepare the Halophyte:

The Salicornia is blanched in hot water and then ice-shocked. Later, it is blended into a raw paste, which is then added to the cake batter.

Chef's inspiration:

All the benefits of Salicornia in a sweet bite.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Salicornia Sponge



Chef Kelvin Cheung
Executive Chef, Jun's

About the dish:

A trifecta of Salicornia – Salicornia matcha mousse, Salicornia caramel, and Salicornia garnish, along with burnt milk crumbs.

How to prepare the Halophyte:

We explored various ways to highlight the versatility of salicornia in this dish. First, we dehydrated it, ground it into a powder, and incorporated it into the flour mixture. We also used salicornia in a purée to create a caramel and infused it into cream to enhance the matcha. Each technique brings a unique flavour and texture to the plate, showcasing its many applications.

Chef's inspiration:

The dessert was crafted to balance the salinity, pairing natural earthiness with the nuttiness of matcha, and incorporating Salicornia into the caramel to harmonize the sweetness and add depth to the dish.

53

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

What's next: a call to action

It's time to harness the transformative power of chefs.

Nature is the foundation of our economic system; fundamental to achieving a resilient future underpinned by sustainable and inclusive economic growth. But nature is vulnerable to the demands we place upon it and the way our systems – including our food systems – operate. Today, the food industry has an opportunity to support the transition towards climate resilience.

By adding Salicornia and Arthrocaulon to their menus, chefs and restaurateurs around the UAE have the chance to make a positive impact for climate and nature.

The halophytes restoration and cultivation project offers us the chance to deepen our understanding of the UAE's natural environment, to learn about these unique plants, and enhance our sustainability credentials - both for ourselves and our establishments.

This movement presents a unique opportunity to shape the use of an endemic ingredient from the UAE. There's a rich storytelling aspect and an educational opportunity for chefs to share their perspectives on working with Emirati ingredients, forging a new connection to the land.

We are optimistic that this initiative will lay the groundwork for industry professionals to innovate with halophytes and other remarkable native species, and look forward to seeing how the vibrant culinary community in the UAE will use locally grown halophytes to create popular dishes.

Leading chefs in the UAE have identified promising key enablers and benefits that can make Salicornia and Arthrocaulon appealing to consumers. They highlighted its taste, local availability, nutritional benefits and its wider role in protecting the natural environment as important factors that enhance the commercial potential of halophytes.

Sustainability of production will be essential to uphold its promise, underscoring the need for collaboration among farmers, local governments, and markets. Word of mouth, community support and promotion will also be vital to raise awareness around halophytes among consumers and the food industry. We invite chefs, beverage professionals, and industry colleagues to join us in exploring and realizing the immense gastronomical and environmental potential of halophytes.

What we present here with the collaboration of different partners and chefs is just the beginning. Together, we can continue to unlock the potential of halophytes across kitchens and cuisines, using the transformative tools and techniques available to us as chefs.

HALOPHYTES:
The UAE's Secret Ingredient for Climate-Resilient Cuisine



Credit : Andrew Gardner

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Special thanks to...

Chef Patricia Roig, Boca

Chef Patricia Roig, Executive Chef of BOCA in Dubai, brings over two decades of global culinary experience, including tenures at MICHELIN-starred restaurants in Spain and London. Originally from Seville, Spain, Chef Patricia is committed to sustainability, sourcing local ingredients, and minimizing kitchen waste. At BOCA, she fuses Mediterranean Andalusian flavours with modern techniques, continuing the restaurant's tradition of excellence and innovation.

BOCA is recognized as a Dubai MICHELIN Guide restaurant, a MICHELIN Green Star recipient, and Gault&Millau's 2023 UAE "Sustainable Kitchen of the Year."

Chef Luca Cobre, Healthy Farm Eatery

Chef Luca Cobre advocates for simplicity and authenticity, believing in the essence of land-to-table cooking and prioritizing premium, organic, and eco-friendly ingredients, rooted in family tradition. As Executive Chef of Healthy Farm Eatery, endorsed by the Royal Family of Sharjah, Chef Luca pioneers healthy dining in Dubai and Sharjah. He explores global farms, fostering partnerships with small-scale producers for quality ingredients.

Innovating beyond menus, Luca introduces plant-based vegan products and DUNE Camel Cheese, celebrated by all. His collaborations with governmental entities underscore his commitment to local agricultural development, promoting healthy lifestyles through tailored meal plans and community engagement.

Chef Kelvin Cheung, Jun's

Chef Kelvin Cheung, a Chinese Canadian raised in Chicago and based in Dubai, is a multi-award-winning chef renowned for his Third Culture Food. He leads Jun's and Little Jun's, combining his Chinese heritage, North American upbringing, and French training with local ingredients. Chef Kelvin's inventive cuisine has earned Jun's accolades, including spots in Dubai's MICHELIN Guide and MENA's 50 Best Restaurants.

Known for his dynamic personality, he advocates for wellness, diversity, and sustainability in the culinary industry. Recently, he cooked for NBA stars and Canadian Prime Minister Justin Trudeau, and was named What's On Dubai's 2024 Chef of the Year.

Chef Ilias Doulamis, Conrad Dubai & Hilton Hotels

Chef Ilias Doulamis, Culinary Director at Conrad Dubai and Regional Chef for Hilton Hotels across the Arabian Peninsula, brings over 22 years of global culinary experience to his role. Leading the culinary teams at Conrad Dubai's diverse F&B outlets, he also oversees operations for 50 Hilton hotels in the region.

Trained in MICHELIN-starred restaurants and with experience in luxury hospitality, Chef Ilias is committed to sustainability, working on projects like hydroponic farming and plant-based food innovation. He has been shaping the culinary landscape in the Arabian Peninsula for the past decade.

HALOPHYTES:

The UAE's Secret Ingredient for Climate-Resilient Cuisine

Chef Yugal Kishor, Reform Social & Grill

Chef Yugal Kishor, Head Chef at Reform Social & Grill, brings 18 years of culinary experience, including 14 in the UAE. Originally from India, his passion for cooking was nurtured by his mother and grandmother. Trained at The Ashok Hotel, Yugal has worked across various prestigious venues in Dubai. He is known for his ability to blend diverse flavours and create menus that surprise and delight.

Chef Yugal values the ability of food to transcend borders and takes pride in evolving his menus to include fresh, innovative options. He is also focused on team development and guest satisfaction.

Chef Milan Jurkovic, 21grams | Urban Balkan Bistro

Chef Milan Jurkovic, Head Chef at 21grams | Urban Balkan Bistro, brings his Serbian heritage and passion for culinary excellence to Dubai. Inspired by his grandmother and influenced by chefs like Jamie Oliver, Chef Milan's journey began in his hometown of Novi Sad, where he honed his skills in local cuisine.

Since joining 21grams in 2017, Milan has elevated Balkan cuisine to new heights, earning accolades such as the MICHELIN Bib Gourmand and recognition from Gault&Millau. He combines tradition with modern techniques, driven by values of simplicity, integrity, creativity and sustainability.

Chef Pavan Chennam, HSBC

Chef Pavan Chennam is an extremely passionate chef with 15 years of solid experience in kitchen management, training young chefs and setting new benchmarks with excellent food quality. He lives by the mantra that excellence is not an option, and must be achieved every passing day. He specializes in Indian and South Indian food, and brings an excellent understanding of European and Japanese food.

Prior to his role at HSBC, Chef Pavan served as Executive Chef of several high-profile establishments such as the JW Marriott Maldives Resort and Spa, Conrad Pune, Goa Marriott and Weligama Marriott Sri Lanka.

We extend our heartfelt gratitude to our valued partners who played an integral role in bringing this project to life.

58



GOVERNMENT OF UMM ALQUWAIN

دائرة السياحة والآثار
DEPARTMENT OF TOURISM AND ARCHAEOLOGY



GOVERNMENT OF UMM ALQUWAIN

دائرة بلدية أم القيوين
DEPARTMENT OF UMM AL QUWAIN MUNICIPALITY



HALOPHYTES





Learn more at

[**naturebasedsolutions.ae**](https://naturebasedsolutions.ae)