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This picture shows a view of the succulent salicornia plants growing on a farm in the desert outside the Gulf emirate of Dubai. — AFP photos

Desert-grown superfood puts 'healthy' burgers on UAE menus

A hardy plant grown using salt water is thriving in the UAE's desert farms and helping create "healthy" burgers, showing sustainable agriculture's potential in the toughest conditions. Salicornia, a succulent, is already being used as a salt replacement in burger patties—a rare farming success in the oil-rich United Arab Emirates, which imports nearly all of its food.

"You have the salty flavor with less sodium, but you also have other benefits," said Tina Siegmund, head of marketing and innovation at UAE-based Global Food Industries, a frozen food manufacturer. The asparagus-like plant reduces sodium content by 40 percent in the company's healthy burgers, which also contain chicken, quinoa and kale.

Native to parts of North America, Europe, South Africa and South Asia, the plant is ideal for the UAE's inhospitable climate, and contains anti-bacterial and anti-inflammatory properties, according to Siegmund. Agriculture produces less



A worker cooks salicornia plant-based burger patties in a pan at a food processing plant in the Gulf emirate of Sharjah.

than one percent of GDP in the UAE, a country on the frontline of climate change with temperatures regularly topping 50 degrees Celsius (122 Fahrenheit) and rising rapidly.

Salicornia cultivation began last year in a number of farms across the UAE as part of an experiment using brine run-off from desalination plants by the Dubai-

based International Center for Biosaline Agriculture (ICBA). Augusto Becerra Lopez-Lavalle, chief scientist at ICBA, said research was now underway into generating more of the "high-value crop", which sells for \$20 a kilo (2.2 pounds) in France.

"We went from... building this prototype, to piloting at scale with eight farmers, and now the question is how to scale up," Lopez-Lavalle told AFP. In the future, salicornia could "become a really important food ingredient" he added. "If there is an economic value and the production system is developed for this, it can become a replacement for salt and any other micronutrients that are added today artificially to processed food." For now, salicornia remains a niche product, its health benefits unknown to most, admits Siegmund. "It's not a product that makes big, big profit, but we believe in it and we will continue," she said.—AFP



A worker prepares a salicornia plant-based mix to be made into burger patties at a food processing plant in the Gulf emirate of Sharjah.



Salicornia plant-based burger patties are prepared for packaging off a production line at a food processing plant in the Gulf emirate of Sharjah.



A mincer produces shreds of salicornia plant-based mix to be made into burger patties at a food processing plant.

Webb Telescope: What will scientists learn?

The James Webb Space Telescope's first images aren't just breathtaking—they contain a wealth of scientific insights and clues that researchers are eager to pursue. Here are some of the things scientists now hope to learn.



This image released by NASA shows the dimmer star at the center of this scene has been sending out rings of gas and dust for thousands of years in all directions, and the James Webb Space Telescope (JWST) has revealed for the first time that this star is cloaked in dust.

Into the deep

Webb's first image, released Monday, delivered the deepest and sharpest infrared image of the distant universe so far, "Webb's First Deep Field." The white circles and ellipses are from the galaxy cluster in the foreground called SMACS 0723, as it appeared more than 4.6 billion years ago—roughly when our Sun formed too. The reddish arcs are from light from ancient galaxies that has traveled more than 13 billion years, bending around the foreground cluster, which acts as a gravitational lens.

The hunt for habitable planets

Webb captured the signature of water, along with previously undetected evidence of clouds and haze, in the atmosphere surrounding a hot, puffy gas giant planet called WASP-96 b that orbits a distant star like our Sun. The telescope achieved this by analyzing starlight filtered through the planet's atmosphere as it moves across the star, to the unfiltered starlight detected when the planet is beside the star—a technique called spectroscopy that no other instrument can do

at the same detail.

WASP-96 b is one of more than 5,000 confirmed exoplanets in the Milky Way. But what really excites astronomers is the prospect of pointing Webb at smaller, rocky worlds, like our own Earth, to search for atmospheres and bodies of liquid water that could support life.

Death of a star

Webb's cameras captured a stellar graveyard, in the Southern Ring Nebula, revealing the dim, dying star at its center in clear detail for the first time, and showing that it is cloaked in dust. Astronomers will use Webb to delve deeper into specifics about "planetary nebulae" like these, which spew out clouds of gas and dust.

These nebulae will eventually also lead to rebirth. The gas and cloud ejection stops after some tens of thousands of years, and once the material is scattered in space, new stars can form.

A cosmic dance

Stephan's Quintet, a grouping of five galaxies, is located in the constellation Pegasus. Webb was able to pierce through the clouds of dust and gas at the center of the galaxy to glean new insights, such as the velocity and composition of outflows of gas near its supermassive black hole.

Four of the galaxies are close together and locked in a "cosmic dance" of repeated close encounters. By studying it, "you learn how the galaxies collide and merge," said cosmologist John Mather, adding our own Milky Way was probably assembled out of 1,000 smaller galaxies. Understanding the black hole better will also give us greater insights into Sagittarius A*, the black hole at the center of the Milky Way, which is shrouded in dust.

Stellar nursery

Perhaps the most beautiful image is that of the "Cosmic Cliffs" from the Carina

Nebula, a stellar nursery. Here, for the first time, Webb has revealed previously invisible regions of star formation, which will tell us more about why stars form with certain mass, and what determines the number that form in a certain region. They may look like mountains, but the tallest of the craggy peaks are seven light years high, and the yellow structures are made from huge hydrocarbon molecules, said Webb project scientist Klaus Pontoppidan.



This image released by NASA from the Mid-Infrared Instrument (MIRI) on the James Webb Space Telescope (JWST) shows never-before-seen details of Stephan's Quintet, a visual grouping of five galaxies.

In addition to being the stuff of stars, nebular material could also be where we come from. "This may be the way that the universe is transporting carbon, the carbon that we're made of, to planets that may be habitable for life," he said.

The great unknown

Perhaps most exciting of all is journeying into the unknown, said Straughn. Hubble played a key role in discovering that dark energy is causing the universe to expand at an ever-growing rate, "so it's hard to imagine what we might learn with this 100 times more powerful instrument."—AFP

US prosecutor says Polanski case transcripts can be unsealed

Los Angeles prosecutors said Tuesday they will no longer oppose the release of sealed transcripts in the statutory rape case against Roman Polanski—documents which the fugitive director has previously argued could reveal judicial misconduct. George Gascon, the Los Angeles County district attorney, said his office had "determined it to be in the interest of justice to agree to the unsealing of these transcripts." "This case has been described by the courts as 'one of the longest-running sagas in California criminal justice history,'" said Gascon in a statement.

"For years, this office has fought the release of information that the victim and public have a right to know." While it is not known what exactly the transcripts contain, they include testimony by former Deputy District Attorney Roger Gunson, the first prosecutor to handle Polanski's case. In 1977, French-Polish director Polanski was arrested after 13-year-old Samantha Gailey accused him of plying her with drugs and champagne and forcibly sodomizing her.



Roman Polanski

Seeking to spare the child a trial, prosecutors dropped the most serious charges in a plea deal, with Polanski accepting guilt for unlawful sexual intercourse with a minor. He served 42 days in prison while undergoing psychiatric evaluation. When it appeared that the judge, Laurence Rittenband, was set to reconsider and hand down a much lengthier prison sentence, Polanski fled to France, where he still resides.

The "Rosemary's Baby" and "Chinatown" director has not returned to the United States since, and has been engaged in a decades-long cat-and-mouse game with officials seeking his extradition, before a global audience split between continuing outrage and forgiveness for his acts. According to Gascon's statement, Polanski first requested the transcripts be unsealed "several years ago" in order to "conduct an investigation into alleged judicial misconduct."—AFP



This image released by NASA from the James Webb Space Telescope (JWST) shows a landscape of "mountains" and "valleys" speckled with glittering stars which is actually the edge of a nearby, young, star-forming region called NGC 3324 in the Carina Nebula. — AFP photos



This image released by NASA is a composite of the information captured by the Near-Infrared Camera (NIRCam) and Mid-Infrared Instrument (MIRI) on the James Webb Space Telescope (JWST) showing a landscape of "mountains" and "valleys" speckled with glittering stars which is actually the edge of a nearby, young, star-forming region called NGC 3324 in the Carina Nebula.